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ABSTRACT

This three-part report addresses recent education reform issues. Part I summarizes education priorities, then describes education's administration, structure, and financing. Part II deals with education's development since 1981. The first section notes major education legislation. A second section presents major issues in the current reform movement, including suggestions offered in significant studies; a trends section offers statistical indications, discusses responses to the call for quality education, notes the state of technology and science in education, and describes programs for special groups. Finally, an education research section deals with accomplishments and trends in National Institute of Education research areas and with the role of the Fund for the Improvement of Postsecondary Education. Part III lists recent education studies, analyses of those studies, and other studies by education field, including adult, management, information resources, linguistics, tests, and urban education. Selected references, 4 figures, 17 tables illustrating earlier statistics, and an outline of the report's headings conclude the document. (KS)

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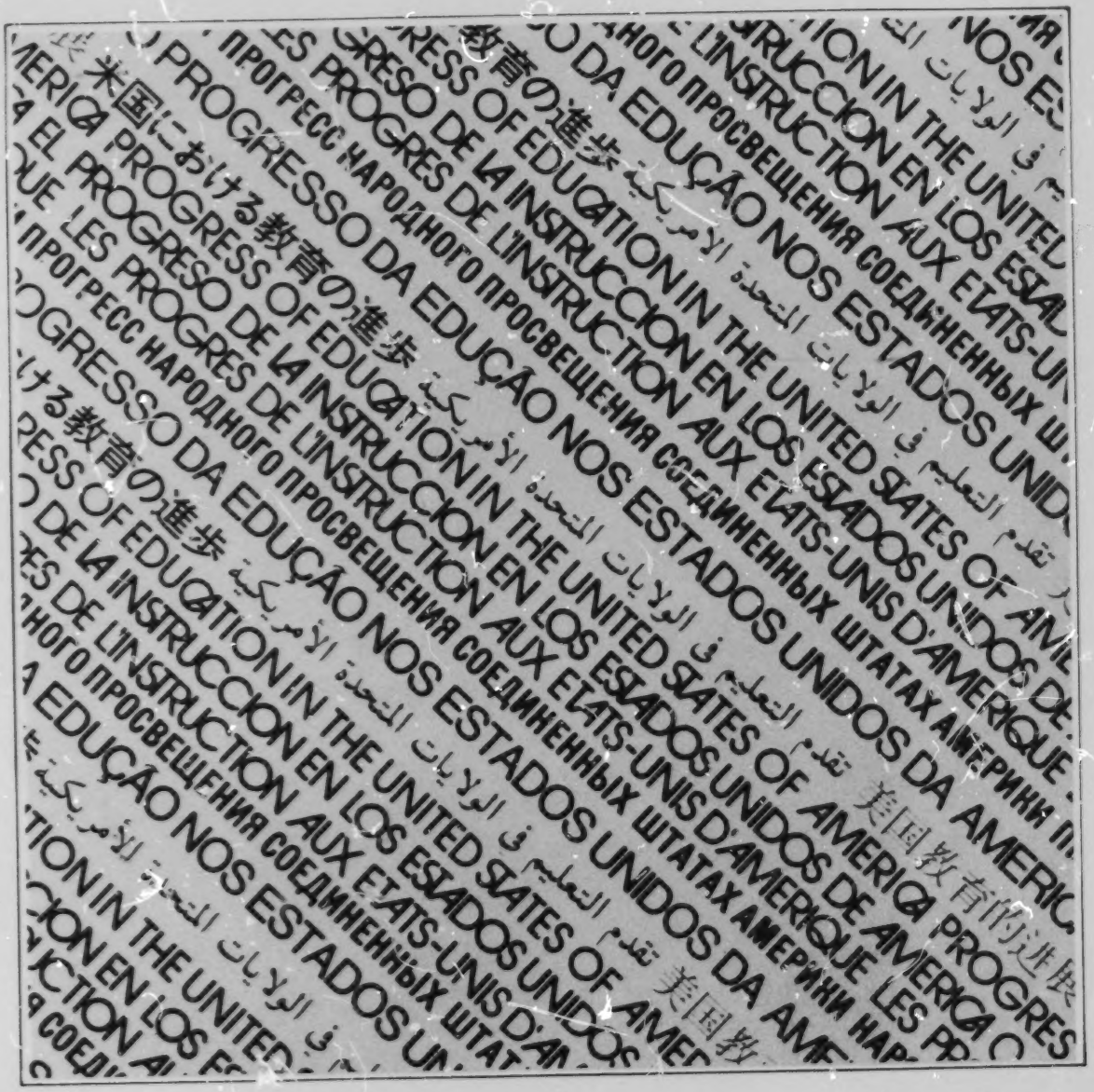
PROGRESS OF EDUCATION IN THE UNITED STATES OF AMERICA
PROGRESSO DA EDUCAÇÃO NOS ESTADOS UNIDOS DA AMERICA
PROGRES DE L'INSTRUCTION AUX ETATS-UNIS D'AMERIQUE
ПРОГРЕСС НАРОДНОГО ПРОСВЕЩЕНИЯ СОЕДИНЕННЫХ ШТАТАХ АМЕРИКИ
米国における教育の進歩
美国教育的进展
تقدم التعليم في الولايات المتحدة الأمريكية

U.S. Department of Education

EA 016 994

Progress of Education in the United States of America 1980-81 through 1982-83

Report for the Thirty-Ninth International Conference of Education, Sponsored by the United Nations Educational, Scientific, and Cultural Organization, International Bureau of Education

U.S. DEPARTMENT OF EDUCATION
T.H. Bell, Secretary
A. Wayne Roberts, Deputy Under Secretary for Intergovernmental and Interagency Affairs

Foreword

The United States is experiencing the greatest education reform in recent memory. A Nation at Risk, prepared by the National Commission on Excellence in Education, and other reports on the status of U.S. education, have produced recommendations that have stimulated this reform. The leadership of President Reagan and Secretary of Education Terrell H . Bell has spearheaded this widespread education effort.

This report for school years 1980-81 through 1982-83 is the most recent in the series prepared for the International Conferences on Education that have been held in Geneva, Switzerland, since 1934 under the auspices of the International Bureau of Education. Data through March 1984 have also been included.

Part I, after a brief summary of current education priorities in the United States, describes the basic system of education in this country--its administration, structure, and financing.

Part II deals with the development of education during the past 3 years, discussing in some detail the major education reform movement now occurring in the United States. The first section summarizes the major education legislation passed during the period. The second section presents some of the major issues in the current education reform movement, including many of the ideas discussed and suggestions made in the significant studies of U.S education during this period. This is followed by a report on the progress actually made, as shown first by statistics and then by a description of some of the initiatives taken to achieve quality education by all levels of government, educators, and communities. This part also discusses developments both in the use and teaching of technology and science in education and also in the education provided to special groups in this country, such as the handicapped and the disadvantaged. It concludes with an overview of what has been accomplished and what is being planned in education research.

Part III presents references to some of the recent studies of U.S. education and of various fields within it. This is followed by the 4 figures and 17 tables that illustrate the statistics given earlier. For the convenience of the reader trying to locate the various sections dealing with a particular topic, a complete outline of headings used in the report may be found on the final pages.

This complete report is available in English and French, with shortened versions in Arabic, Chinese, Japanese, Spanish, and Russian. These versions and the report in French are for the use of those countries represented at the International Conference on Education in Geneva, and also for the thousands of visitors from abroad who seek information from the U.S. Department of Education and for non-English-speaking educators and policymakers in many other countries.

A. Wayne Roberts
Deputy Under Secretary for
Intergovernmental and Interagency Affairs

June 1, 1984

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Part I

Organization and Structure of the Education System

1. PRINCIPLES, OBJECTIVES, AND PRIORITIES

PRINCIPLES

Education in the United States[1] is a highly decentralized function. The 10th amendment to the Constitution provides that "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." Since responsibility for education is not mentioned in the Constitution, it is legally reserved to the States. Thus, each State has the right and responsibility to organize and operate its educational system as it deems appropriate--subject to constitutional guarantees of the rights and privileges of U.S. citizens.

State statutory provisions for establishing educational institutions and programs vary greatly among the States. Some are quite specific; others simply mention educational matters in broad terms. Considerable responsiblity is often delegated to local education authorities. Despite various differences among the States, in practice the organizational patterns of education in the 50 States are similar as a result of such common social and economic forces as the need to prepare students for employment and higher education, State certification or accrediting association requirements, and the various regulations governing State and Federal funding.

Education in the United States is compulsory, usually from the age of 6 to 16, and free at least through completion of secondary school (grade 12) for those who attend public schools, which are available to all children. Public education aims to assure equality of access and of educational opportunity to both boys and girls, including all minority groups and the handicapped. Moreover, public schools have a long tradition of coeducation.

Legislation also provides for establishment of private schools on every level, subject to State licensing and accreditation regulations. These institutions may receive limited governmental aid for specialized purposes but are for the most part financially autonomous.

Education in the United States reflects generally the values and priorities of the society, beginning with an enduring national commitment to democracy and individual freedom. Diversity and flexibility have historically characterized the U.S. approach to education. It is the goal of U.S. education to provide all children with an opportunity for a quality education that will enable them to achieve their highest potential in a free society and to function as effective citizens in the modern

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[1] As its name implies, the United States is a union of 50 different States plus 7 jurisdictions located in outlying territories. Hereinafter the "State" means the subdivision of the Nation, not the entire Nation.

world. Measures necessary to enhance excellence and improve quality in U.S. education are among the chief concerns of leaders and administrators from the Federal to the State and local levels.

Generally speaking, the educational program includes reading, writing, and other communication skills; arithmetic and other computational skills; science, including the scientific method, critical thinking, and problem solving; U.S. civilization, including history, values, culture, and the concepts and processes of democratic government; and multicultural understanding, regarding both the diverse ethnic heritage of the United States and, increasingly, the history, culture, and traditions of other nations and peoples.

U.S. education also endeavors to provide every student with some basic educational opportunities in art and music, health and nutrition, the practical arts, and physical education, along with an introduction to the world of work, usually both in career awareness and in some forms of career preparation.

OBJECTIVES AND PRIORITIES IN EDUCATION

Quality Education as a National Issue

During the period of this report, excellence in education has become a national priority. A broad and vital interest in improving the quality of U.S. education has developed throughout the Nation and has appeared at every level of government, in private industry, and in many citizen groups and associations.

A clear evidence of the urgency felt throughout the country to improve its education is the large number of studies describing the status of U.S. education and making recommendations for its reform and renewal, issued during 1983 by governmental and private groups and commissions. One of the major studies was A Nation at Risk: The Imperative for Educational Reform, prepared by a select and diverse commission of educators at the request of Secretary of Education T. H. Bell. This study's recommendations were subsequently discussed in 12 regional forums that involved 12,000 education leaders and culminated in the National Forum on Excellence in Education, held in December 1983. The National Forum brought together over 2,000 national, State, and local leaders, including Governors, State legislators, Members of Congress, State and local school officials, college and university presidents, deans, and faculty, business leaders, teachers, parents, students, and other private citizens.

President Reagan and Secretary Bell both addressed the National Forum. The President outlined six reforms that he believed fundamental: (1) To restore discipline, (2) to end drug and alcohol abuse, (3) to raise academic standards, (4) to encourage good teaching, (5) to restore parents

and State and local governments to their rightful place in the educational process, and (6) to teach the basics (particularly science and mathematics).

Secretary Bell spoke in terms of priorities, listing the following three in order of their importance:

o "Attainment by every student of the highest possible level of literacy so that each student will have reached the outer limits of his or her ability to read with comprehension, write and think systematically and logically, and to speak with clarity in a manner that is articulate, precise, and reflective of an intelligent, well-educated individual."

o Attainment by all students, "within the limits of their ability, (of) a high level of mastery of the basic elements of arithmetic and mathematics, and to observe intelligently and interpret the natural world they inhabit."

o Preparation of students "for the responsibilities of the high office of private citizen." To that end, they must "study the story of mankind, our social, political, government, and economic history."

He then offered each State the challenge of attaining the following four major goals within the next 5 years:

> "1. By 1989, all high school graduates in all 50 States will be required to study English (emphasis on priority one) for 4 years, and math, science, and social studies for 3 years (emphasis on outcomes of priorities two and three). All students will be required to pass examinations in these areas. Only those not intellectually competent will be excused. The percentage of students completing at least 2 years of foreign language study will match the percentage of students entering college. There will be no decline in the commitment nor the momentum to provide equal opportunity, special help to the disadvantaged, or free and appropriate education to the handicapped.
>
> "2. In every State, the high school graduating class will surpass by 1989 the high school graduating class SAT/ACT[1] scores attained by the class of 1965.
>
> "3. Every State by 1989 will increase the retention power and decrease the high school dropout rate so that no State will have a dropout rate in excess of 10 percent.

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[1]The SAT is the Scholastic Aptitude Test, and the ACT is the American College Testing Program. These two standardized tests, most commonly taken in the last year of secondary school, are widely used in the admissions process of U.S. colleges and universities. (Ed. note.)

"4. Every State will make teaching so attractive that entry level college graduates' salaries will be competitive with the average entry level salaries of college graduates with degrees in business and engineering.

"Every State will establish career ladders and master teacher pay scales for experienced teachers that will make it possible for the highest salaries paid to the most outstanding teachers to range within 5 percent parity of school administrators."

The Effect on Education Priorities of Political, Economic, Technological, and Social Developments

The surge of widespread national concern about the quality of education in the United States was only one manifestation in the field of education of a number of developments in other areas.

In November 1980, U.S. citizens elected a President dedicated to reducing the growing Federal role in domestic affairs, including education. This "New Federalism" has inspired several objectives in education at the Federal level, including that of limiting the Federal Government's action in education. Federal involvement is seen as limited to (1) leadership, (2) research and data collection, (3) financial aid to college students, (4) carefully targeted aid to students who have not received an equal educational opportunity at the elementary and secondary levels, and (5) a guarantee of civil rights and equal opportunity. This interpretation of the Federal role is based on the Constitution's reservation of responsibility for education to the States.

The New Federalism gave rise to other education objectives. During the 1970's, a massive shift of education power from States and local agencies to the Federal Government had occurred, largely in the effort to eliminate inequality of opportunity for the economically disadvanataged, women, all racial minorities, the handicapped, the gifted and talented, and non-English-speaking students. The result had been a plethora of regulations and paperwork, as well as a great increase of Federal funding for education. New Federalism has attempted to reverse this shift in direction by decreasing Federal requirements, consolidating Federal education programs, and reducing the amount of Federal money appropriated for education (as for other Federal programs, in the effort to reduce inflation), while still preserving earlier gains in equality of educational opportunity.

The objective of reducing Federal funds for education flowed not only from the New Federalism, but also from the President's efforts to reduce inflation and decrease interest rates by lowering Federal Government spending. While much progress has been made in attaining these general economic goals, the reductions in Federal dollars spent for education and in the percent of the Federal contribution to education have not been great.

Other economic developments have had an even greater effect on education priorities. The Nation over the past decade has gradually awakened to the danger posed to the U.S. economy as a whole by its relative neglect of science and mathematics in the elementary and secondary curriculums. By the end of the secondary grades, students in many other countries have advanced much further in these subjects, which are essential to all technological development. As the United States has lost its previous share of the market in various fields and has considered how to assure its financial future in world markets, it has realized that U.S. students must have a curriculum in science and mathematics that is at least comparable to the best in other nations. This realization has helped to increase interest by business and industry in the schools, an interest that has been demonstrated both through funding and active cooperation and participation in school programs.

A recent technological development--the production of inexpensive microcomputers--is a major cause of the strong resurgence of interest in education throughout the Nation. It is perceived that the availability of microcomputers has made it possible to place them in all schools and thereby to greatly speed and improve the education process in all fields and ultimately to further technological development and economic progress in the Nation. "Computer literacy" is now considered by many to be an essential element in a secondary school education.

Two social/demographic changes have also affected education priorities in the last few years. One is the large numbers of immigrants from Cuba, Haiti, Southeast Asia, and Latin America who have settled in certain areas of the United States, thus increasing the need to provide some special help to students whose native language is not English. The other is the steadily decreasing percentage of the population that is of school age. As the percentage of older people in the United States has risen, so has the demand for health and other social services for the elderly, thus cutting into the proportion of available funding that can be allocated to education. Another result has been a demand to give a larger proportion of the education dollar to adult education of all kinds.

Technological development, combined with the recession of the early 1980's in the United States and the loss of a large share of the automobile market to Japan, has resulted in a high unemployment rate that only began to recede in late 1983. Many of the unemployed will not be able to go back into their former jobs as the financial situation improves but will require retraining to enable them to fit into new kinds of work in a changing world where the computer has become central and the information business is assuming unprecedented importance. There is thus a new urgency to provide vocational and adult education, particularly in the mode of retraining.

2. SYSTEM OF ADMINISTRATION

As stated at the beginning of this report, in the United States "each State has the right and responsibility to organize and operate its educational system as it deems appropriate, subject only to the constitutional guarantees of the rights and privileges of U.S. citizens." This discussion of the way that U.S. schools are administered will therefore deal primarily with the States' role, and the role that they have delegated to local communities at the elementary and secondary levels. Postsecondary institutions are administered somewhat differently, and therefore will be discussed separately in this section. The total role of the Federal Government has been changing and is an actively debated issue, which will be discussed in part II, chapter 2. In this section, the Federal role in the administration of education will be summarized as it existed in early 1984.

THE ROLE OF STATE GOVERNMENTS IN ELEMENTARY AND SECONDARY EDUCATION

On the State level, each State legislature enacts laws pertaining to elementary and secondary education. Within the context of these laws, education policy and requirements for public elementary and secondary schools are determined in most States by a State board of education and are carried out under the leadership of a chief State school officer and a staff of professional educators and support personnel in a State department of education.

Methods of appointment to State boards of education differ according to state law and tradition. In some States, members are elected directly by the people; in others, they are appointed by the Governors; and in various cases some school board members have status ex officio by virtue of other positions they hold.

The head of the State education department, the chief State school officer (the title varies with the State), is either appointed by the State board of education, elected by popular vote, or appointed by the Governor. The duties of the office normally include varying combinations of such functions as distributing State funds to local education authorities (an estimated 47 percent of all funds expended in public elementary and secondary education in the United States in 1980-81 came from State sources), administering or interpreting school laws, certifying teachers, helping improve educational standards through inservice training programs, and providing advisory services to local superintendents and school boards.

Typically, State regulations for public schools cover duration of the school year and day, graduation requirements, and standards for teacher certification, school transportation, health services, and fire protection. standards. For private schools, about one-half the States have some sort of mandatory approval process that results in a license, accredita-

tion, or registration. A few States require that all private school teachers be certified by the State before they can teach in a private school. Not only do the requirements for operating a private school vary from State to State, but the level and manner of enforcement of those requirements vary widely, as well.

State boards of education with their National Association of State Boards of Education and chief State school officers with their Council of Chief State School Officers are strong voices on the national scene in relation to Federal education legislation and policy.

THE ROLE OF LOCAL AUTHORITIES IN ELEMENTARY AND SECONDARY EDUCATION

Each State (except Hawaii) has local administrative districts with extensive authority and responsibility for establishing and regulating public elementary and secondary schools. Each local school district has a board of education, usually made up of 5 to 7 members, who have been appointed by higher officials or elected by citizens of the school district. Within the limits of State policy, the board operates the local public school system through the school superintendent and his or her staff.

The functions of the board of education in determining education policies, and of the superintendent of schools in executing these policies, include a broad range of duties and responsibilities. Together, the board and the superintendent are responsible for preparing the school budget. They usually have considerable latitude within broad State policy to determine most aspects of the curriculum. They are responsible for hiring teachers and other school personnel, providing and maintaining school buildings, purchasing school equipment and supplies, and, in most cases, providing transportation facilities for pupils who live beyond a reasonable walking distance from school. Their duties also include enacting rules and regulations consistent with State law and regulations of the State department of education governing operation of the schools. Thus, the limitations on the actions of school boards are those established by the State legislature and by the State education agencies, which have in most cases prescribed minimum standards for all local school districts.

School systems vary in size from small ones in rural areas, with a single one-room elementary school, to those in metropolitan areas, with hundreds of schools of various kinds and thousands of teachers. Some States have regional service districts or centers to provide local school systems with consultative, advisory, and statistical services, and to handle regulatory functions.

Ability to provide improved educational facilities and opportunities more economically in larger school districts than in smaller ones continues to be the major reason for consolidation of school districts. In school year 1980-81, the United States had approximately 15,500 school districts, down from about 16,800 ten years before.

THE ADMINISTRATION OF POSTSECONDARY EDUCATION

Postsecondary institutions, both public and private, receive authority to function and to grant degrees from the State in which they are located or incorporated. This authority comes from a State's constitution or from laws passed by the State legislature. The Federal Government exercises no direct control over establishment of institutions or over the standards they maintain, except for those concerned specifically with preparing persons as career officers for the military. In specific areas, such as enforcement of the Civil Rights Act as it relates to higher education programs, the Federal Government has legal responsibilities.

Virtually all laws authorizing Federal assistance to institutions require that they meet minimum licensing and accreditation standards. However, the concept of "provisional" accreditation does permit some institutions to receive assistance while involved in formal and final accreditation. Generally speaking, institutions are re-accredited about every 5 years.

Most States now have some form of statewide policy planning and coordination system to guide the development of public higher education within the State. The most common kinds of arrangements for this purpose are coordinating boards and consolidated governing boards. In most statewide systems individual campuses have high degrees of institutional autonomy within the policies and overall plans established by State and/or institutional boards. Many larger States, such as California and New York, have highly developed statewide systems of higher education.

Nearly all higher education institutions receive some form of financial support from both State and Federal governments, although public institutions generally receive a substantially higher proportion of their budget from public funds. Other sources of income for both public and private institutions are student tuition and fees, endowment earnings, and contributions from philanthropic foundations and individuals. Many public community colleges, particularly those drawing students from several school districts, receive the bulk of their public funds from a separate community college district established for each institution for this purpose. In a growing number of States, public community colleges receive more than half their funds from their State government.

The principal internal policy and financial decisions affecting colleges and universities in the United States are made by their boards of trustees (sometimes called boards of regents). The procedures for selecting members of the board are, in most instances, stated in the institution's founding charter, and, depending upon the institution,

members may serve either specified terms or may be appointed for life. Public institutions may have trustees who are elected or who have been appointed by the State Governor. Private institutions, nondenominational or religious, usually have representatives of the institution's founding body serving as trustees. In recent years, many boards of trustees, both public and private, have attempted to broaden their membership to ensure wide representation of the diverse elements that make up the institution's academic and social environment.

THE ROLE OF THE FEDERAL GOVERNMENT

The role of the Federal Government in the administration of education has been to provide leadership on educational issues of broad national concern and to safeguard the right of every citizen to have access to free public education and equal opportunity, as appropriate within legislative mandates and constitutional constraints. To support these functions, the Congress over the years has enacted legislation establishing a large variety of funded programs, most but not all of which have been administered by the U.S. Department of Education through the issuance of regulations and the carrying out of oversight activities. (Federal funding at the various education levels is covered in the next chapter in the section on financing.) In the last few years, however, a decrease in Federal regulations and in the Federal authority to disperse funds within the States has lessened the degree of administrative control of education by the Federal Government.

The only elementary and secondary schools that are funded and administered solely by the Federal Government are for the dependents of the overseas military. These are operated by the Department of Defense, with advice provided by local school advisory committees and a national advisory council. Schools serving military dependents on installations in the United States receive Federal funding but operate under the direction of local school boards.

The Federal Government requests advice on administering some Federal education programs from citizen councils and committees established for that purpose by legislation, Executive Order, or administrative authority. The members are usually appointed by the President, the Secretary of the Department, or the agency head. The largest number of Federal advisory groups on education are associated with programs administered by the U.S. Department of Education.

3. ORGANIZATION AND STRUCTURE

STRUCTURE

Education in the United States is organized on three principal levels: The elementary (including preschool and primary), the secondary, and the postsecondary. Vocational education is available at the secondary and postsecondary levels. In addition, formal and informal programs of adult and continuing education are widely available in such variety that it is possible for U.S. citizens in virtually any part of the country to be enrolled in formal courses or participate in informal programs of education and learning throughout their lives. (The structure of U.S. education is illustrated in figure 1.)

Compulsory education begins in most States at age 7 and continues usually until age 16. However, some States require attendance beginning at age 6.

On the primary and secondary levels, the academic year usually begins in September and continues through the first or second week in June. The school day is approximately 6 hours' duration, usually from 8:30 a.m. to 3:30 p.m. In most instances, particularly at the secondary level, students are expected to do some additional study and school assignments outside the school period. On the postsecondary level, the academic calendar is much more flexible. The norm for a full-time student is 2 semesters of approximately 15 or 16 weeks each per academic year, but there are several variations on this pattern, including the trimester system (3 per year) and the quarter system (4 11-week periods per year). In the latter two patterns, the student normally does not attend school during the entire year but rather 2 out of 3 trimesters or 3 out of 4 quarters.

Elementary Education

Elementary education in the United States consists of 1 or 2 years of preschool (most commonly kindergarten) and 5 or 8 years of primary education.

Most public school systems provide half-day kindergarten classes for children 5 years of age and some also provide nursery classes for younger children. Although enrollment at age 5 is voluntary, 93 percent of 5-year-olds were enrolled in school in 1980. The Head Start program, financed in part by Federal funds, is designed primarily for preschool children from poor families.

Preschool education programs maintain a close relationship with the home and parents and aim to give children useful experiences that will prepare them for elementary school. The programs are flexible and are designed to help children grow in self-reliance, learn to get along with others, and form good work and play habits.

Although primary education may consist of 6 or 8 grades, the 6-grade school is most common. The main purpose of the primary school is the general development of children from 6 to 12 or 14 years of age (depending on whether the school is a 6- or 8-year elementary school). The program aims to help pupils acquire basic skills, knowledge, and positive attitudes toward learning. Emphasis is placed on the growth of the individual child and the relation of the child's progress to his or her needs and abilities. The traditional subjects are considered tools for learning, and the teacher helps children recognize problems, work out solutions, and evaluate the results. Some schools have ungraded classes in the first few years so that children may progress at their own speed in different subjects. Almost all elementary students progress to the secondary level of school.

During the 1960's, the middle school concept began to take form in U.S. education. In essence a refinement of the junior high school concept of improving the transition from elementary to secondary education, the middle school usually includes grades 5 or 6 through 8, provides team teaching and other innovative instructional methods, and emphasizes curriculum exploration and gradual independence for students. Its purpose is to serve the educational needs of students in the early adolescent period between 10 and 14 years of age.

Secondary Education

Secondary or high school education in the United States begins at grade 7 or grade 9, depending upon whether the elementary education of a particular area extends through grade 6 or grade 8.

As shown in figure 1, in the 8-4 plan used in many schools, students pursue grades 1 through 8 in an elementary school and grades 9 through 12 in a secondary school. The 6-3-3 plan provides for an elementary school of 6 grades and a junior (intermediate) and a senior high school of 3 grades each. Smaller communities sometimes use the 6-6 plan with 6 years each for both the elementary and secondary school programs. The purpose of the different organizational plans is to make the best use of a school system's physical facilities, staff, and instructional resources within the framework of the system's established education philosophy and goals.

During the early secondary years most students are going through the complex physical and emotional changes of puberty. Many are also making tentative choices of career goals. These years are therefore a period in which school guidance and counseling services are of considerable importance to the pupils' physical, emotional, academic, and career development.

By the beginning of grade 10, most pupils have decided whether they will follow a primarily academic program leading to university entrance, a vocational program leading to employment or specialized postsecondary training, or a general program combining elements of both the academic and the vocational programs. In recent years, the so-called general program has been criticized as being in many instances neither sufficiently academic to prepare pupils for college or university study nor sufficiently job-oriented to prepare them for employment.

All secondary school programs lead to the high school diploma and are offered in the same comprehensive institution in most school districts. A comprehensive institution arrangement facilitates a combined curriculum like the general program, allows for transfer from one program to another, and provides the flexibility for students to develop individual schedules--sometimes with the help of computers--that combine highly desirable aspects of different curricular tracks. It is not unusual for a medium-sized comprehensive high school to offer 200 or more different courses. The comprehensive high school also provides the opportunity for young people with widely different career interests and a variety of social and economic backgrounds to have regular contact with each other in an open, democratic context.

Most secondary school students have completed the minimum years of schooling required by law a year or more before graduating from high school. About three-quarters of them remain in school, however, until they receive the high school diploma at the end of grade 12. One reason for this is the flexibility of the American senior high school both in academic and vocational dimensions. In a growing number of schools, academically gifted pupils can take several additional hours per week of advanced science or mathematics during their last 2 years of high school. Most secondary schools offer some foreign language courses, most commonly Spanish and French. In many instances, pupils taking advanced courses may receive college or university credit.

As the student moves into secondary school, more educational choices become available to meet individual needs and interests. Increasingly, the education program is beginning to experiment with utilization of the entire range of learning resources available in the total community instead of limiting itself to the confines of textbooks and formal classes in the school building itself. In many communities learning is being enriched through a variety of work-study and work-experience opportunities and through community volunteer and public service activities as part of a more broadly conceived integrated education program.

Also, in an increasing number of schools, secondary students of both sexes who are interested in programs of vocational-technical education may choose from a wide selection of job-related courses. Moreover, many schools provide the opportunity for school-coordinated work-study programs. Pupils enrolled in these programs spend part of the day in school and part of the day on a job. It is possible in a growing number of school districts to complete high school graduation requirements in

accelerated programs of study and thus graduate 1 or even 2 semesters early. Pupils who leave school before earning their high school diploma may work toward it at little or no financial cost in evening programs. Various types of summer study and enrichment programs are also available at all levels of education.

Private Elementary and Secondary Education

Private education at the elementary and secondary levels is similar to public education in structure. The vast majority of private schools are coeducational and range from those designed to serve handicapped children to inner-city religious schools and to college preparatory boarding schools.

In 1980-81, students in private schools represented about 10.8 percent of the Nation's children in elementary and secondary schools. Approximately 5 million students were enrolled in 20,000 private schools. Over one-half of these students were located in the seven States with the highest numbers of private school students. Listed in order of enrollment, these were New York, California, Ohio, Michigan, New Jersey, Pennsylvania, and Illinois. Generally, private school enrollments stabilized in the late 1980's after a decade of falling enrollments.

The majority of private elementary and secondary school students are enrolled in Roman Catholic schools--63.2 percent. Non-affiliated schools account for about 16 percent of private school enrollment, while the remaining 20 percent are enrolled in other religiously affiliated schools. Also, Roman Catholic schools account for the majority of private schools--50.1 percent, while non-affiliated schools account for 20.1 percent, and other religiously affilated schools, 29 percent. The number of fundamentalist/evangelical Christian schools has increased significantly during the last few years. While the Federal Government has not gathered any statistics on their enrollments, it appears that these schools are growing in number and size in every region of the country, with a particular concentration in the south and far west.

Legislation affecting private education and issues concerning it are discussed in part II, in chapters 1 and 2, respectively.

Vocational Education

Enrollment in vocational education at all levels totaled a record 16,862,000 in fiscal year 1981 (the most recent year for which data are available through the Vocational Education Data System of the National Center for Education Statistics). This represents a 2.5 percent increase over enrollment levels for fiscal year 1980. Approximately 51 percent of these students were female.

Vocational education also showed significant increases in the numbers of persons served in 1980-81 who were handicapped, disadvantaged, or had limited proficiency in the English language. Enrollment of men and women in programs that have not been traditional for their respective sexes

(e.g., males enrolled in consumer and homemaking education, or females enrolled in agriculture) also showed some gains. Vocational education continued to serve other special population groups such as homemakers, Indians, the incarcerated, and students in the Appalachian region.

The Department of Education's vocational education unit reported that total expenditures for vocational education increased from $2.7 billion in 1972 to $7.2 billion in fiscal year 1981 and that Federal expenditures represented 9.9 percent of total expenditures for vocational education.

Programs

General education, in the earlier grades, is the foundation for both vocational and general education in secondary and postsecondary institutions. General education at the secondary level provides the basic skills and academic preparation required for postsecondary study. Vocational education, on the other hand, begins at the secondary level and continues into the 2-year postsecondary level.

Vocational education, through its many programs, services, and activities, trains the Nation's youth for work while emphasizing equal access to training opportunities for males and females, the disadvantaged, the handicapped, and persons with limited-English-language proficiency. Vocational education also retrains and upgrades adult workers to keep them abreast of the changing needs in business and industry, and continues to contribute to achieving national goals of productivity and economic development.

The major goal of vocational education programs is to increase the student's knowledge and skills about a specific job or occupational field. Vocational education offers more than 400 instructional programs at the secondary, postsecondary, or adult levels to increase a person's potential for employment or upgrade a person's skill in a current job. These programs are usually grouped under vocational education's seven traditional occupational headings: Agriculture, marketing and distribution, health occupations, occupational home economics, business and office occupations, technical education, and trade and industrial education.

Certain programs logically continue from the secondary to the postsecondary level. These include office occupations, distributive education, health occupations, and other nontechnical programs. Technical education, because of the academic foundation required at the secondary level, usually begins with postsecondary schooling. However, several special purpose high schools and large vocational/technical schools offer technical programs at the secondary level. Generally, a 2-year postsecondary program is required for minimal competency in any of the physical sciences. A student may choose to terminate his or her technical education at this point if the postsecondary program permits, and transfer credits to and continue study at a 4-year college or university. Thus, a local progression between the subprofessional and the professional technical occupations exists among institutions that offer technical programs.

Institutions offering vocational education provide not only benefits to students, but a wide range of special services to their communities. One of these services is customized, quick-start training programs for individual firms as part of planned economic development. Twenty States and Puerto Rico have established such programs with a total funding of $28.8 million, of which 72 percent was State and local funds. During 1981-82, an estimated 110,000 persons were trained in this type of program alone.

Impact

A very large percentage of vocational education graduates have been able to obtain employment. Furthermore, studies indicate that secondary vocational education can make a significant, if limited, contribution to improving productivity and reducing income inequality. Persons who take more concentrated amounts of vocational education (usually three credits or more) are more likely to be in the labor force for a full year than those who take only limited amounts (usually less than three credits). Males who take more concentrated amounts of vocational education annually earn $1,000 to $2,000 more than those who do not. This income advantage is partly due to postsecondary educational involvement of nonvocational graduates, but the advantages over students with no vocational credits still persist when this factor is ruled out, even if they are somewhat less. White females concentrating in vocational education reportedly have substantial earning advantages over other women.

Enrollment in vocational education does not seem to limit additional educational pursuits, as all types of students participate in all types of postsecondary education programs. Some researchers have also concluded that vocational education has some influence in preventing school dropouts. However, although increased exposure to vocational education programs adds to a school's ability to retain students, it is apparently not enough to retain those youth who are highly alienated from formal schooling.

In summary, vocational education continues to contribute to a consistent flow of skilled, entry-level workers from its regular secondary and postsecondary programs and to provide specialized training and retraining for adults. In other words, it is intended to simultaneously meet the needs of students, employers, and communities.

Higher Education

Types of Institutions

Generally speaking, there are three main kinds of degree-granting higher education institutions in the United States: The 2-year community or junior college, the 4-year undergraduate college, and the university. The university normally includes undergraduate as well as graduate and professional education. Each category has both public and private institutions. Two-year institutions offer terminal degrees (associate

degrees) for 2 years of study or preparation for moving into the last 2 years of undergraduate study at 4-year colleges. Four-year institutions may offer undergraduate or graduate degrees and some have post-doctoral programs for advanced study -generally based upon an individualized study or research plan.

A newly adopted classification of 4-year higher education institutions is based on total degrees awarded and the fields in which the degrees were awarded. It divides them into doctoral, comprehensive, general baccalaureate, and specialized institutions. Doctoral institutions are characterized by a significant level of activity in and commitment to doctoral-level programs. Comprehensive institutions have a strong post-baccalaureate program, but do not engage in significant doctoral-level education. General baccalaureate institutions focus primarily on undergraduate baccalaureate education. And the specialized category includes professional and specialized institutions.

In academic year 1982-83, of the 3,280 higher education institutions in the United States, 1,885 were 4-year colleges and universities. Of these, 167 were doctoral level, 408 were comprehensive, 727 were general baccalaureate, and 583 were specialized. There were 1,206 2-year colleges and 189 institutions that had not yet been classified. (In addition, some 8,000 nonacademic postsecondary schools in both the public and private sectors were offering job training in a wide variety of occupations. Normally, these vocational schools do not grant academic degrees but offer certificates or diplomas of completion of training in a given trade or skill.)

The many and diverse degree-granting institutions in the United States comprise a broad spectrum of academic traditions, philosophies, and goals. More than half (1,787) are private institutions originally established by special interest groups for social, educational, or religious purposes, but the public institutions contain approximately 78 percent of the total enrollment in postsecondary education. Coherence and unity are maintained among so many different institutions through the work of accrediting agencies and associations--voluntary bodies established by institutions, professions, or specialized fields to develop and maintain standards. Federal and State governments also require certain standards as a condition of financial assistance. Moreover, the professional integrity of the teaching staff and the demands of the economy for qualified graduates motivate most institutions to monitor carefully the quality of their institutional programs.

Degrees

The associate's degree.--The Associate of Arts (A.A.) or the Associate of Science (A.S.) degree is usually earned at a community or junior college upon completion of 2 years of study. In many instances, it represents the same level of educational achievement as completion of the first 2 years of a 4-year college or university, and large numbers of students who have earned the associate's degree transfer to 4-year

institutions. Other students, especially those who have completed programs of job-related training, normally enter the work force as mid-level technicians.

The bachelor's degree.--The bachelor's degree normally requires 4 years of academic study beyond the high school diploma. In recent years, accelerated learning plans, credit by examination, or practical work experience, year-round study plans, and other innovations have enabled some students to complete the program in less than 4 years.

The two most common bachelor's degrees are the Bachelor of Arts (B.A.) and the Bachelor of Science (B.S.). The former normally requires more courses in the arts and humanities whereas the latter usually places greater emphasis on the sciences. Other common bachelor's degrees include the B.Ed. (education), the B.F.A. (fine arts), the B.Mus. (Music), and the B.B.A. (business administration). The B.Arch. (architecture) is often a 5-year program.

The B.D. (divinity) and the L.B. (law) are professional degrees, usually of 3 years' duration, that in most institutions require a candidate to have earned first a B.A. or a B.S.

During 1981-82, a total of 952,998 bachelor's degrees of all types were conferred in the United States.

The master's degree.--Master's degree programs vary considerably among the approximately 1,000 institutions that award them. The number of fields in which master's degrees are conferred is very large, but most are called Master of Arts (M.A.) or Master of Science (M.S.) degrees, or are professional degrees such as Master of Nursing (M.Nurs.) or Master of Social Work (M.S.W.). Programs leading to the degree usually require 1 to 2 years of advanced study in graduate-level courses and seminars. Frequently a thesis is required and/or a final oral or written examination. Requirements may differ not only among institutions but among disciplines within an institution as well.

During 1981-82, a total of 295,546 master's degrees of all types were conferred in the United States.

The doctor's degree.--The doctorate, usually the Doctor of Philosophy (Ph.D.), is normally considered the highest academic degree conferred in the United States. It attests to the ability of its holder to do original research of a high order. Since work at the doctoral level is highly individualized, the specific requirements may vary widely. In general, however, the degree requires a minimum of 2 years of course work beyond the master's degree level, success in a qualifying examination, proficiency in one or two foreign languages and/or in an equivalent research tool (such as statistics) that may be considered appropriate to a particular field of specialization, and completion of a doctoral dissertation that is normally intended to represent an original contribution to knowledge.

During 1981-82, a total of 32,707 doctorates of all types were conferred in the United States.

First professional degrees.--In addition to the foregoing degrees in a wide range of academic fields, during 1981-82, a total of 72,032 first professional degrees were conferred in: Dentistry (D.D.S. or D.M.D.), law (LL.B or J.D.), medicine (M.D.), theology (B.D. or M.Div., or Rabbi), veterinary medicine (D.V.M.), podiatry (Pod.D. or D.P.) or podiatric medicine (D.P.M.), optometry (O.D.), osteopathy (D.O.), chiropractic medicine (D.C. or D.C.M.), and pharmacy (D.Phar.). The educational prerequisites and length of study required for these degrees vary with the field of study. For example, in medicine most students, after receiving a bachelor's degree, complete 4 years of medical studies before receiving the M.D. degree. Subsequently, they often enter into 3 years of residency training in a specialty.

CURRICULUM DEVELOPMENT

State and local education authorities are responsible for determining and developing public school curriculum. This function is expressly prohibited to the Federal Government by statute. There is no national public curriculum at any level of education. In fact, the U.S. Congress carefully monitors Federal assistance for curriculum development to assure that State and local control is maintained. However, the actions of the Federal Government can have indirect influence on public school curriculum through research in the field (to be discussed in part II, chapter 4), and through leadership, as in the establishment of the National Commission on Excellence in Education to report on the status of education in the Nation and make recommendations concerning it, and in the holding of a National Forum on Excellence in Education in December 1983. (Some specific information about average curriculum content will be given in part II, chapter 2, in the discussion of new policy/issue orientations.)

Elementary and Secondary Curriculums

States exercise their responsibility for public school curriculums in four major ways: By establishing the requirements for students to earn high school diplomas within the State; by selecting the texts to be used in classrooms; by developing minimum-competency tests; and by providing technical assistance. Most States specify, for example, that one or more social studies courses be in American history or the history of their particular State. Local school districts may add curriculum requirements of their own, such as local history or sex education.

State officials select textbooks and other curriculum materials for elementary schools and secondary schools in about half of the States. Local school officials make the selections in the remainder. Whether the selection occurs at the State or local level, the State or local board of education usually delegates the responsibility to a textbook commission or

committee made up of professional educators and community representatives. Most commonly, textbook commissions approve several textbooks and materials for each course, and local authorities make selections from the list.

The number of States with State adoption systems has been stable for many years. However, several States have modified their systems to increase the participation of local school authorities. Also, there is a trend toward including more materials on State lists.

Much content selection and arrangement--in essence, curriculum development--is done by private publishing firms that pay educators and other specialists to prepare teaching materials. These firms then submit the finished products to the State and local textbook commissions for approval. In some school districts, teams of teachers and curriculum experts develop teaching materials in a wide variety of fields. Usually teachers may choose a program of study from these materials or from the variety of commercially published or, sometimes, university-prepared courses of study that have been approved by local or State school authorities.

Minimum-competency testing is a fairly new means by which States may influence local curriculum. It originated in the midseventies. Some form of minimum-competency testing now exists in 38 States. Initially, States mandated that students meet a minimum standard of competency before receiving a high school diploma. Gradually, testing has been extended downward, so that now many States conduct minimum-competency testing at two or three checkpoints in schooling to identify students not progressing satisfactorily and to give them remedial help. Reading, writing, and mathematics are the three subjects most commonly targeted for minimum-competency testing, typically in grades 3 or 4, 6, 8 or 9, and 11 or 12.

Technical assistance, the fourth way that States influence local curriculum, is delivered primarily by State curriculum specialists in the various fields (e.g., science and home economics). Among other activities, they work with local district personnel individually, conduct regional and statewide workshops, and organize the development of State curriculum guides (suggested, not mandatory).

Despite the decentralized nature of American education, a certain pragmatic standardization of curriculum exists. First, the textbook is probably the greatest determiner of curriculum, and many textbook publishers have successfully achieved very large markets among the schools.

Second, college and university entrance requirements strongly affect curriculum decisions at the secondary school level; local school authorities want their graduates to be readily admitted to higher education institutions. (Textbook development is discussed in part II, chapter 3.) In some cases a high school's curriculum may be wholly or largely college preparatory, even though the college-bound population may be only about 50 or 60 percent of the high school's student body.

Third, national achievement and aptitude tests developed by private, nonprofit organizations influence secondary school curriculums, and, to some extent, elementary school curriculums. The national norms on these tests tend to be seen as norms for achievement locally and, consciously or unconsciously, teachers may begin to teach solely in preparation for the tests. The local norms for some upper socioeconomic communities are higher than the national norms.

One influential testing program is the National Assessment of Educational Progress (NAEP), a periodic measurement of the skills, attitudes, and knowledge of representative samples of 9-, 13-, and 17-year-olds in reading, writing, mathematics, science, social studies, and other subjects. NAEP's impact on curriculum is more indirect than direct; it is felt primarily through the many State assessment programs independent of, but patterned after, NAEP.

The two tests most widely used for college and university entrance are the Scholastic Aptitude Test (SAT) and the American College Testing Program (ACT). The SAT is a test of vocabulary and reasoning skills that is taken by about 1.5 million students each year. The ACT is similar to the SAT but covers social studies and the natural sciences in addition to math and English. About 200,000 students take that test each year.

Postsecondary Curriculums

States do not have a direct influence on the curriculum in either private or public postsecondary academic institutions. Curriculum decisions are made most often within academic departments, and individual professors are responsible for the content of their courses. The institutions usually require that a student earn a given number of credits. Many also require a student to take a specified number and sequence of courses in a major field of study before conferring a degree.

States can exercise considerable indirect control, however, over postsecondary academic institutions, both public and private, through their licensing authority. For example, through power delegated to professional licensing boards, States can require that professionals such as teachers, doctors, attorneys, and engineers complete a minimum number of courses from a specified list of academic or professional subjects to qualify for a license to practice.

TEACHER EDUCATION

Preservice

All preservice teacher education in the United States is at the higher education level. Both public and private universities have departments, schools, or colleges of education, as do those institutions that during the past few decades have developed from State normal (teachers) schools into State colleges. In addition, a few institutions in the

United States specialize exclusively in preparing educators to teach special subjects such as music and art, or to give instruction to severely handicapped children.

A recent survey by the U.S. Department of Education for the National Commission on Excellence in Education produced the following statistics.

In 1982-83, of the 1,206 schools, colleges, or departments of education (SCDE's) offering elementary or secondary teacher-education programs, 11 percent were general baccalaureate institutions, and 8 percent were specialized institutions. Approximately 108,000 bachelor's degrees in education were awarded in 1980-81. Over three-fourths of these were conferred by doctoral and comprehensive schools (31 and 47 percent, respectively), while 18 percent were awarded by baccalaureate schools and 3 percent by specialized schools. The average number of bachelor's degrees per institution ranged from 36 in general baccalaureate schools to 264 in doctoral schools.

Of the 1,206 institutions offering elementary or secondary teacher education, the majority of doctoral and comprehensive schools are publicly controlled (75 and 66 percent), while most of the general baccalaureate and specialized schools are privately controlled (82 and 98 percent). Overall, 38 percent of the SCDE's are public institutions and 62 percent are private. In 1980-81, public institutions awarded 78 percent of the bachelor's degrees in education, while private institutions awarded 22 percent.

In the 1975-76 academic year, 155,000 students received baccalaureate degrees in education. In 1980-81, the number had dropped to 108,000, a decrease of 30 percent. Doctoral, comprehensive, and baccalaureate institutions all experienced about the same percent decreases (30 to 31 percent) in baccalaureate degrees in education over this period, while specialized institutions averaged a 17-percent decrease.

Candidates for teacher-education programs, in most cases, must have completed 1 or 2 years of general college undergraduate study. They are then accepted into teacher-education programs on the basis of their college academic records and personal interviews.

The minimum requirement for teaching on the elementary and secondary level in any of the 50 States is now the bachelor's degree.

While most teacher training occurs in 4-year programs, about 5 percent of SCDE's have 5-year programs, most of which are in California. In most elementary teacher programs, the core professional studies curriculum consists of an average of 45 percent theory and 55 percent methods. This pattern is reversed in secondary programs, which average 56 percent theory and 44 percent methods. Although the "ideal" proportion of theory and methods in professional studies has been a subject for debate, some respondents argued that this question imposed a false dichotomy. According to them, theory and methods should be, and frequently are, fully integrated in all education courses.

Many States require that teachers acquire a graduate degree within 10 years. Incentives to pursue further study, beyond what is required, include salary increments and free tuition.

All States require that the program of studies followed by future teachers include general education, specialization in a teaching field, and professional education courses. Recent data show that throughout the country teacher-preparation programs are built on a basic foundation of general "liberal arts" education in which the humanities, natural sciences, and social sciences are included. To this general education foundation and special study in a teaching specialty, pedagogical studies are added. Study in the clinical and pedagogical field comprises about 70 percent of the preservice study for prospective elementary school teachers and about 20 percent for prospective secondary school teachers. All States now require that future teachers have full-time, student-teaching experience in a public school classroom, under the supervision of an experienced teacher approved by the college or university teacher-education program in which the students are enrolled.

The certification of teachers in certain subjects or at certain levels is regulated by an agency in each State. A certificate or license to teach is issued by each State once its requirements are fulfilled. There are several types of certificates issued, based on training and need: Permanent (regular), probationary, and temporary. The specific certification titles vary widely from State to State.

Inservice

Most school districts in the country encourage or assist elementary and secondary teachers in one way or another to continue their professional growth. Professional development opportunities frequently available to teachers are formal courses and workshops. Those that attract the most participants tend to focus on problems that affect large numbers of teachers, such as instructing handicapped children in regular classes, meeting the needs of children from low-income families, and providing bilingual and multicultural education.

Not only do higher education institutions provide these programs, but many large school districts and several smaller ones sponsor workshops using their own staff, with or without outside consultants. Many districts have established inservice training centers, which often include a reference library, an audiovisual center, workrooms for developing instructional materials, and rooms for seminars or lectures. With increased frequency, the control of teacher centers is being entrusted to the teachers themselves.

Inservice opportunities also include visits to other schools, availability of consultants for individual problems, and certain days (often called "inservice days") on which pupils are excused from school and teachers participate in special programs of instruction or enrichment.

Many school districts encourage their teachers to participate in inservice education in a variety of ways. They may (1) require a prescribed number of courses before a teaching contract can be renewed; (2) subsidize tuition fees at the university; (3) increase the salary of teachers who earn higher degrees, complete a given number of credit hours, or participate in other approved inservice educational activities; (4) release teachers from classroom responsibilities and provide travel expenses to enable them to attend professional meetings; (5) approve sabbaticals; or (6) legitimatize released time during the day.

Chapters 2 and 3 of part II discuss significant trends and issues in preservice and inservice education.

4. FINANCING

In 1982, the Nation spent an estimated $215 billion, or about 7 percent of its gross national product on education, a slightly lower proportion than in the preceding years. In terms of current dollars, however, the Nation has substantially increased its expenditures for education in the course of the past 50 years, including the year 1982 (table 1).

Funds for education come principally from taxes collected by the Federal, State, and local governments. In 1981-82, about $166 billion, or about 13.5 percent of total expenditures at the Federal, State, and local levels, went for education (table 2).

ELEMENTARY AND SECONDARY EDUCATION

Public elementary and secondary schools receive virtually all of their revenue from government sources. In 1980-81 their total revenue receipts amounted to almost $106 billion. Historically, local government has been the main source of funds, but its role has been shrinking and that of the State governments has been increasing. In 1978-79 revenue from the State governments exceeded those from local governments for the first time. The increased role of the States in financing public elementary and secondary education was further underlined the following year, when the proportion of the funds provided by the Federal Government dropped from 9.8 to 9.3 percent (table 3). Although the Federal share of education costs remains fairly even from State to State, it varies considerably within States, being notably higher in major cities.

During 1983-84, it is expected that about $141 billion will be spent on elementary and secondary education, of which $124.7 billion will be in public schools and $16.3 billion in private schools.

Total per-pupil expenditures for public elementary and secondary education averaged $2,900 in 1981-82, almost $200 higher than in the preceding year (table 4). In terms of constant dollars, however, this meant very little change. Per-pupil expenditures in current dollars more than doubled between 1970-71 and 1980-81, with the increase amounting to about 23 percent in terms of constant dollars. It should also be noted that declining enrollments (leading to smaller classes) and increased program costs were primary factors in the rise of per capita student expenditures. Services to students with special needs, a steadily rising percentage of the school population, for example, averages 15.4 perent higher than for those who do not receive special services.

The levels of current per-pupil expenditures varied greatly among the States, from a high of $5,369 in Alaska in 1980 to a low of $1,685 in Mississippi, with the level in most States ranging from $2,000 to $3,000.

These differences are not just a result of varying levels of commitment to education but reflect cost-of-living levels and the relative resource bases from which States can derive income.

HIGHER EDUCATION

About one-third of the total funds for education flow to higher education institutions. In 1981-82, their current funds of revenues amounted to a total of $72 billion, about two-thirds of which went to public institutions, while the remaining third went to private institutions (table 5). This meant a tripling of the amounts that had been available to higher education institutions 10 years earlier.

As they had done in public elementary and secondary education, State governments shouldered an increasingly large proportion of the burden of financial support of higher education, in part at least to take up the slack left by a decrease in the proportion of funds from Federal sources. In 1981-82, public institutions received 45.3 percent of their revenue from State governments, and only 11.4 percent from the Federal Government. Private institutions received only very small amounts from State governments, but they derived 16.9 percent of their total current fund revenues from the Federal Government, a higher proportion than the public institutions (table 5).

The proportion of the total revenues coming from tuition and fees paid by the students increased from 21 percent of the total current revenues of the institutions in 1970-71 to an average of only 21.9 percent in 1981-82. In private institutions, however, the average tuition and fees from students had risen much more sharply, constituting 37.6 percent of the total revenues in 1981-82 (table 5), as against 35.8 in 1970-71.

FEDERAL AID

In 1983, the U.S. Department of Education spent $15.1 billion to help support and strengthen the Nation's schools. About half was spent on elementary and secondary education and half on higher education. In addition, almost every other Federal agency funded some programs that directly or indirectly contributed money and services to schools.

In terms of level of financial support and public visibility, the following continue to be among the major Federal programs, given here with summary descriptions and the approximate funding for them in fiscal year 1983.

o Education for the Disadvantaged: The primary program for the disadvantaged is generally referred to either as Title 1 or Chapter 1, the latter being its current name. (Explanation of the legislation to which the title and chapter belong is given in the section on New Federal Legislation, part II, chapter 1.) This program provides compensatory education services for about 5 million disadvantaged elementary and

secondary students. Since 1966, more than $42 billion has been appropriated for this activity in order to assist disadvantaged children to acquire basic academic skills and thus enhance their opportunity to participate fully in society and to share equally in its benefits. (Further information about this program is given in part II, chapter 3.) Fiscal year 1983 funding was over $3 billion.

o Education for the Handicapped: This program provides special services for about 4 million handicapped children in elementary and secondary schools. It assists States to provide full educational opportunities to all handicapped children. The goal is to ensure that all handicapped children receive a free, appropriate public education designed to meet their unique educational needs. (Further information about this program is given in part II, chapter 3.) Fiscal year 1983 funding was over $1 billion.

o Vocational Education: This program provides supporting services to about 17 million students. Funds are focused on activities directly related to local, State, and national economic development; on increasing existing vocational education programs; on providing programs for the handicapped and disadvantaged; and on strengthening State leadership capacities in vocational education. (Further information about vocational education is given earlier in part I.) Fiscal year 1983 funding was over $700 million.

o Block Grants for School Improvement: The block grant program is often referred to as Chapter 2, part of the Education and Consolidation and Improvement Act of 1981. This program provides aid to States to improve the quality of education for all children. It is focused on general improvement in education rather than on narrow categorical activities, while allowing local and State officials to set their own priorities among the categorical activities (e.g., education of the gifted and talented, energy education). Chapter 2 assumes that the States and local school districts have the best understanding of the needs of their children and gives them the flexibility to use it in a way that will best serve local schools and students. (Further information about block grants is given in part II, chapters 1 and 3.) Fiscal year 1983 funding was about $480 million.

o School Assistance in Federally Affected Areas: Known as "Impact Aid," this program assists school districts that are the most heavily burdened by the presence of Federal installations and activities. Payments are made to those districts that enroll students whose parents both live and work on Federal property and thus do not provide local tax revenues. Fiscal year 1983 funding was about $463 million.

o Student Financial Assistance: These programs help students meet the cost of attending postsecondary institutions through grants, low-interest loans, and work-study programs. Almost 80 percent of all student aid is derived from these programs. (Recent amendments of student financial legislation are discussed in part II, chapter 1.) Fiscal year 1983 funding was over $6.5 billion.

Other Federal programs include education research and improvement (described in chapter 4 of part II); adult education; bilingual and minority language programs (described in part II, chapter 3); and aid to higher education, including a program to strengthen developing institutions programs. (It should be noted that the developing institutions program's funding for black colleges totaled $606 million in all kinds of Federal aid in 1983, an increase of $42 million over 1982.)

Part II
The Development of Education

1. NEW FEDERAL EDUCATION LEGISLATION

BACKGROUND

The role of the Federal Government in education in the United States has been somewhat limited throughout the Nation's history. As pointed out earlier in this report, education was not included as a responsibility of the Federal Government by the writers of the U.S. Constitution. At the time of the formation of the Nation, the function of providing formal education was largely left to the family and the church. When it became obvious that neither the family nor the church could adequately respond to an expanding need for formal education programs, local governmental bodies began to take an active role in advocating, financing, and organizing schools.

The local governmental supervision and control of schools was satisfactory for the early period of the Nation's history. However, it was soon recognized that education was a function of major importance to the people, and that the Nation could not afford to be without free public education. Considerable variation developed from place to place regarding the educational opportunity available to children. When this and similar disparities began to be widely recognized, State governments started to take an active role in standardizing schools, assisting local governments in financing schools, and in certifying teachers. Therefore, State constitutions as they were written and adopted generally described a more prominent role for State governments in their provisions of elementary and secondary education. These actions were all to be carried out in keeping with two important principles: (1) Education through secondary school graduation was to be financed by State and local government, and (2) education was to be as equitable as possible within the State. Therefore, education in the United States has developed historically and legally as a responsibility of State and local governments. The Federal Government did not become involved to any significant extent in financial support until the last 30 years. That support has never exceeded 10 percent of the Nation's expenditures for education.

The current Executive Branch education policy, as articulated by the President and the Secretary of Education, is that the control and responsibility for maintaining and operating schools and colleges should continue to rest with State and local governments, that the federally appropriated money to support education should not interfere with this principle, and that the Federal role should be one of limited financial support to segments of education that State and local governments have not fairly or adequately addressed.

Prior to the Reagan Administration, more than 100 statutes had been enacted by the Congress to establish small financial aid programs for a given set of students or institutions. This Administration has been partially successful in persuading the Congress to change this policy by making its educational appropriations in more generalized blocks of

financial resources, thereby allowing State and local authorities to expend the federally appropriated resources for services which they feel are important and essential to quality education.

THE LEGISLATION

The Reagan Administration began its legislative missions for education with considerable zeal. A proposal was made to the Congress to consolidate a number of categorical grant-in-aid programs into an arrangement that required much less specificity of State and local agencies in expending the money. The Administration also requested a smaller appropriation of funds for education from the Congress. These strategies were conceived in the policy context not only of a general reduction in Federal spending, but also of a diminished role for the Federal Government in education, articulated by Ronald Reagan when he campaigned for the presidency in 1980.

The Congress was not completely responsive to the Administration's proposals to diminish the Federal Government's role in education. The President requested a $13.5 billion appropriation for education for 1981. In the final appropriations action, $14.8 billion was made available. Although the Administration's proposal for the consolidation and simplification of education programs was not adopted, a substitute measure was adopted. This was the first of a number of legislative enactments affecting education on which the Reagan Administration had a definite impact.

The Education Consolidation and Improvement Act of 1981

The Congress succeeded, through a budget limitation type of action technically known as reconciliation, in achieving major policy changes in the type of support for education. The Act that passed, the Education Consolidation and Improvement Act of 1981 (Public Law 97-35), contained more realistic appropriations limitations for the many education programs than had been previously established in the authorizing legislation. More significantly, this enactment established a new trend in Federal education legislation. In the past, the Congress had responded to pressure and advocacy groups by enacting a large number of relatively small programs of specific financial assistance targeted to rather narrow aspects of education. It is generally agreed that the Education Consolidation and Improvement Act signaled the end of this trend and the beginning of a trend toward more generalized Federal financial aid to education. This new trend, generally referred to as a block grant trend, is advocated by the Executive Branch and has been widely applied not only to education but to other governmental functions.

One major change in elementary-secondary grant-in-aid programs affected the large program which provides remedial (compensatory) education for the disadvantaged. This program provides slightly more than $3 billion annually to elementary and secondary schools that enroll economically or educationally disadvantaged students. The impetus of this new

legislation was to make this program substantially less demanding on State and local agency administrators in planning, carrying out, and reporting on the compensatory education projects supported by these funds. Before this Act passed, approximately 50 pages of statutory language of processes and procedures were specified by the Congress to govern the program. The consolidation act reduced the statute to six pages. There was much less Federal prescription as to what schools must do to qualify for funds. Fewer procedures were specified in the new legislation. Technically the new program is referred to as Chapter 1, Education Consolidation and Improvement Act--Financial Assistance To Meet Special Educational Needs of Disadvantaged Children.

The second major change in the elementary and secondary Federal programs was the repeal of 29 program statutes, the majority of which created small demonstration-type curriculum development possibilities for local school systems. The aggregate annual appropriation for the 29 individual programs was $525,485,000 in 1981. The fiscal year 1982 funding for the Chapter 2 Consolidated program was $470,400,000. The Congress then wrote the legislation establishing the Chapter 2 Consolidated program, creating a block grant plan whereby the States could spend their respective allotments for any of the educational activities formerly authorized in the separate 29 education programs. Each State was required to pass through 80 percent of its allotments to local education agencies. Therefore, this new program guaranteed each of the approximately 16,000 local school systems in the Nation some federally appropriated education improvement money. It also represented the most generalized Federal grant-in-aid program of recent times. The Reagan Administration and its emphasis on removing the Federal Government from regulating and controlling the affairs of local governments was definitely impacting education and the role of the Federal Government therein. Further discussion of the Chapter 2 program may be found in chapter 3 of this part.

Student Financial Aid Amendments 1981-82

The Congress passed and the President signed into law two enactments that adjusted the Federal funds appropriated to assist college students in meeting the cost of attendance at postsecondary institutions. For more than a decade the Federal Government has been annually appropriating substantial sums of money for students who need financial help to attend college. Federal assistance is available in the form of grants and low-interest loans and in work-study programs. Between 1978 and 1981 any student, regardless of family income, could acquire a low-interest loan of up to $2,500 per academic year to attend undergraduate college. Public Law 97-35 required college students from families with a gross annual income of more than $30,000 to demonstrate an actual financial need to qualify for a loan to attend college. Certain other changes affecting the interest rates charged on student loans were also made by Public Law 97-35.

On October 13, 1982, the President also signed into law a bill establishing new policies on the calculation of the amount needy college students might receive in the form of a grant from the Federal Government. The name given to such grants is "Pell grant" in honor of Senator Pell

from Rhode Island whose leadership was significant in designing and in enacting the program. The aforementioned law established $1,800 as the maximum Pell Grant for the 1983-94 school year or 50 percent of the cost of attending a higher education institution, whichever is the smaller. Certain other changes were made in the methodology used to calculate the amount a family should contribute (depending upon its financial resources) for the college education of a child before obtaining Federal financial aid.

The 1984 Appropriation Act

The annual appropriation act for 1984 (Public Law 98-129), signed by the President on October 13, 1983, made $15.422 billion available to education. This represents the largest appropriation ever made by the Congress of funds for education. Approximately $6.8 billion of the total goes to elementary-secondary education and $7.4 billion to postsecondary. Of the $7.4 billion for postsecondary education, slightly more than $6 billion is for student financial aid.

The Education Consolidation and Improvement Act Amendments

On December 8, 1983, President Reagan signed into law an act (Public Law 98-211) that established minor changes in the Education Consolidation and Improvement Act discussed previously. These amendments clarified some portions of the original law by defining certain classes of students to whom services will be provided under the education for the disadvantaged program. The role of parents was defined more precisely and the relationship of the Federal program to State and local programs was made more explicit. Minor changes in other programs were also addressed in this act. It is important to note, however, that the adoption of this legislation did not alter the important trend established in 1981 of adjusting Federal grant-in-aid education policy toward a more general approach affording State and local agencies more flexibility in expending federally appropriated funds.

The Education of the Handicapped Act Amendments

On December 2, 1983, the President signed a law that added amendments to the Education of the Handicapped Act. These amendments (Public Law 98-199) do not alter the major Federal subvention for education of handicapped children in any way. The Federal Government continues to provide more than $1 billion annually to States for the education of handicapped children. It also continues to guarantee to all handicapped youth a right to equal educational opportunity. This 1983 law extended those portions of the Handicapped Act that establish programs dealing with research, developmental, and personnel training needs that supplement the larger amount of money sent to the States for educational services for handicapped children. One new demonstration program for giving handicapped students in secondary schools transitional types of services was created. The law also provided a new method of assuring that handicapped students in private schools receive a fair share of the benefits of the Federal aid for handicapped children.

The Vocational Rehabilitation Act Amendments

On February 22, 1984, President Reagan signed Public Law 98-221, extending the Vocational Rehabilitation Act for 3 years. This legislation provides funds for the rehabilitation of adult handicapped individuals. The last annual appropriation for this act was $1.1 billion. This act also makes minor adjustments in the discretionary program portion of the basic Rehabilitation Act. The discretionary programs are those which provide research and demonstration data on the national level as to how the problems and needs of adult handicapped persons can best be met.

Other Education Enactments of the 98th Congress

Other relatively small educational measures were enacted by the 98th Congress. For several years there has been a higher education assistance program for developing colleges. This program was amended last year by Public Law 98-95 to allow developing colleges who qualify to receive Federal funds to develop a long-term endowment program as a source of financial support.

Other legislation (Public Law 98-167) was enacted that (1) added penalties for defaulters who refuse to pay back the student loans they received to attend college, (2) required draft-eligible college students to provide proof of their draft registration status prior to receiving student financial aid, and (3) provided for minor financial reconstruction of the mix of government and private capital buttressing the student loan programs (Public Law 98-79).

A FORWARD GLANCE

During 1984, the Congress is primarily concerned with the extension of several grant-in-aid programs that have been in force over the past years. The reauthorization and modification of the Vocational Education Act will likely be completed. Other programs that will probably be reauthorized are Indian education, portions of the higher education act, the Impact Aid program, the Bilingual Education Act, the Adult Education Act, and possibly a few others. In summary, it seems likely that the consolidation and simplification of Federal policy for grant-in-aid assistance to education by the Reagan Administration has had a definite impact on the Nation. The trend toward consolidation and simplification of Federal education activity will probably be present for several years.

2. NEW POLICY/ISSUE ORIENTATIONS

The last 3 years in U.S. education have been marked by a very high degree of discussion, controversy, and ferment, all of which bode very well for a renewed dedication to educational improvement and to putting into effect in individual States and communities some of the initiatives on which there is consensus within those States and communities. This chapter deals only with the most discussed policies and issues out of a much larger number. It describes only the recommendations, ideas, and arguments being put forward, not what is being done in the schools to put some of these recommendations into practice, which will be the subject of the next chapter, on trends.

THE MANY STUDIES OF U.S. EDUCATION

The year 1983 will stand out in U.S. education history as the time when public concern for U.S. education reached a sufficient height to substantially affect U.S. schools, particularly at the elementary and secondary levels. During or very close to this year, at least nine major studies of U.S. education were produced, and the number is considered higher by some. Many other studies were also produced, some of which were less comprehensive, had smaller data bases, and/or more narrow sponsorship than those here termed "major." They were none the less important, not only in themselves, but also in their indication that concern was widespread in the Nation and in their active involvement of a great number of citizens in the discussion of what should be done about U.S. education. The major studies are listed in part III. Their sponsorship, membership, data base, time frame, and date of release are shown in an accompanying table.

While the quality of the 1983 studies was high, they were unique primarily in their quantity. Many of their general findings and similar recommendations had been published before, most notably in a 1958 report entitled, The Pursuit of Excellence: Education and the Future of America, published by the Rockefeller Brothers Fund's America at Mid-Century panel. Several analyses and comparisons of some of the 1983 studies are listed among the documentary references in part III. While the studies covered all education levels and many areas (according to one analysis: school organization and management, curriculum, students and learning, quality and equality, teachers and teaching, postsecondary education, leadership in relation to the local, State, and Federal roles as well as business and industry, and research), this report will discuss only those issues, primarily at the elementary and secondary levels, that seem to have drawn widespread attention among educators, the press, and the general public. It will also discuss major issues that, although dealt with by some of the studies, perhaps owe their present importance more to the initiative of the President and the Secretary of Education than to the studies themselves.

EMPHASIS ON MATHEMATICS AND SCIENCE
IN ELEMENTARY AND SECONDARY SCHOOLS

The public is concerned about the inadequacy of mathematics and science education in the schools, as evidenced by the diminished requirements and actual practice throughout the Nation's schools, as well as by the decline in standardized test scores in those subjects. The U.S. Department of Education's National Center for Education Statistics reports that the national mean graduation requirement in mathematics is 1.7 years of secondary study and in science, 1.6 years. As for the number of years actually taken, the High School and Beyond study showed that the average number of years of math taken in private high schools is somewhat higher, 2.4, and in public high schools, 2.0. In science the figures are 2.0 and 1.7 for private and public, respectively. Furthermore, the Department's National Institute of Education issued a study suggesting that not only have most enrollments in mathematics and science declined, but course content has been diluted.

The decline in test scores is illustrated by the fact that the average mathematics scores in the Scholastic Aptitude Tests (SAT's) fell almost 40 points from 1963 to 1980. These facts stand in strange contrast to the findings by the National Assessment of Educational Progress that almost half of the 9-year-olds sampled listed mathematics as their favorite subject.

Concerned about the Nation's future ability to compete with the rest of the world in technology if U.S. education did not improve, the studies of mathematics and science education point to an insufficient number of properly trained teachers in those subjects as a primary cause of the problem. Over the last decade, there has been a steep decline in the number of teachers prepared to teach secondary school mathematics and science. A 1982 report by the National Science Foundation stated that 44 States had either a shortage or a critical shortage of chemistry and mathematics teachers, and 45 States had a shortage of physics teachers. Most sources believe that one reason for the shortage is that experienced teachers in these subjects are leaving, often for higher paying jobs in business and industry. These vacated teaching positions are often being filled by teachers not certified as mathematics or science teachers or else the positions are being left vacant. Other reasons given are that fewer postsecondary students are receiving degrees in these subject areas, that math and science teachers who major in education receive fewer hours of college instruction than do math and science majors, and that, once teaching, many teachers fail to keep current in their fields.

Many solutions have been proposed. A Nation at Risk recommended that State and local high school graduation requirements include 3 years of mathematics and 3 years of science. The recommendation list of the National Science Board Commission on Precollege Education in Mathematics, Science and Technology describes a strategy of:

"(1) building a strong and lasting national commitment to quality mathematics, science and technology education for all students; (2) providing earlier and increased exposure to these fields; (3) providing a system for measuring student achievement and participation; (4) retraining current teachers, retaining excellent teachers and attracting new teachers of the highest quality and the strongest commitment; (5) improving the quality and usefulness of the courses that are taught; (6) establishing exemplary programs--landmarks of excellence--in every community to foster a new standard of academic excellence; (7) utilizing all available resources, including the new information technologies and informal education; and (8) establishing a procedure to determine the costs of required improvements and how to pay for them."

The Carnegie Foundation for the Advancement of Teaching suggests that school districts--

- o "establish a lectureship program to permit highly qualified professionals to teach on a part-time basis . . .
- o "look to recently retired college professors and business and industry personnel for persons who, with brief orientation, could teach part time in high-demand subjects . . .
- o "enter into partnerships with business and industry to form joint appointments . . . . One member of the team might teach in school for a year or two while the other works at a non-school job . . . ."

Federal legislation has been proposed that would assist States in retraining teachers to become math and science teachers.

INCREASED STANDARDS AND GRADUATION REQUIREMENTS

The call is both for higher standards throughout each educational level and also for additional course requirements for graduation from secondary school. The higher standards usually include grading that truly reflects academic achievement; higher admission requirements to post-secondary education; frequent administering of standardized achievement tests and their use diagnostically; upgrading of textbooks and other learning tools to make them more rigorous; and assuring that new instructional materials reflect the results of education research, technology, and scholarship.

A Nation at Risk proposes that States and local secondary schools not only increase their mathematics and science requirements to 3 years of each, but also that the requirements include 4 years of English, 3 years of social studies, and one-half year of computer science, with a strong recommendation that those students intending to enter college take 2 years of a foreign language. Although not all the studies of U.S. education

agree on these requirements, most do see a core curriculum of some sort as important and a need to eliminate extraneous, nonessential courses.

Recent studies show that average credits in core curriculum subjects ranged from 3.6 units in grade 9 to 2.6 units in grade 12. Only 2 percent of 1982 graduates had fulfilled all of the Commission's suggested requirements for a diploma. Only in English and social studies did a majority of students take the recommended number of courses. In grade 12, students of Asian background typically earned 15 credits in basic subjects, whites earned 13, and black and Hispanic students, 12. Students in New England and the middle Atlantic States earned an average of 3 more credits than those from other regions of the United States; and students in private high schools earned an average of 3 more credits than their counterparts in public schools.

Related to the recommendations for stiffer standards and more basic required courses are the proposals to lengthen the school day and to increase the number of days in the school year. Comparisons with the school day and year of other industrial countries are used to support such proposals.

IMPROVEMENT OF TEACHING IN ELEMENTARY AND SECONDARY SCHOOLS

If there is one focal point for the movement to achieve educational excellence in the United States, it is the conviction that there can be no quality education without quality teaching and thus that something must be done to improve the quality of teaching in the schools. A host of ideas on how quality teaching may be achieved has been put forward, with very little agreement among the proponents, particularly in details, except on the need to increase the base salary of <u>all</u> teachers.

Compensation is often linked in recommendations with the quality of a teacher's performance and establishment of a career ladder, pay being linked to differentiated teaching responsibilities (such as aiding inexperienced teachers) and/or performance. The aim is to allow an able and experienced teacher to increase his or her salary without having to leave teaching to do so; i.e., entering administration or other fields outside teaching. Such a system of career incentives would involve evaluation that would include clear criteria and peer review. Another suggestion is to extend the employment year to 11 months, thereby providing both opportunity for higher compensation and also time for curriculum and professional development. Increased compensation is often given as one way to improve teachers' status and thus attract more able people to the profession.

Proposals to improve teacher preservice training and the quality of the teaching profession emphasize raising standards at teacher-education colleges, universities, and departments, lengthening teacher-education programs, increasing the ratio of time spent learning subject matter to time spent learning how to teach, and drafting a code of ethics for the

teaching profession. Several studies also proposed some form of financial incentive to attract the most able students to enroll in teacher-education schools and remain in the profession.

Another approach to getting more and better teachers soon, which is recommended by several studies, was adopted by the Council of Chief State School Officers at their December 1983 meeting. The approach is to modify State certification laws and regulations so that they no longer require prospective teachers to take undergraduate education courses. The basic idea is that the profession will then be able to attract able candidates who do not want to teach full time or who have attended colleges that do not offer teacher-education programs.

Another major area of recommendations for improving teaching is amelioration of teachers' working conditions. These include providing more time for preparation, limiting nonacademic duties and distractions, restricting the classload, and supporting classroom teachers with school policies that would lessen the problems of discipline. Polls show that the lack of discipline in the schools is the number one education concern of most U.S. citizens. Although some aspects of the problem are improving, the President brought it to the forefront of the education discussion early in 1984, making several practical suggestions for improving school discipline that will be discussed in chapter 3 of this part, in the section on Federal initiatives.

INCREASED LEADERSHIP AND SUPPORT FOR ELEMENTARY AND SECONDARY SCHOOLS

While opinions vary concerning what level of government or other group should provide how much leadership and how much support for which activity, the consensus is that all parts of U.S. society concerned with education--the Federal Government, the State governments, local school districts, school superintendents and principals, teachers, parents, and business and industries--should contribute in some manner to an all-out national effort to improve U.S. education at the elementary and secondary levels.

Considerable agreement also exists that school improvement must begin at the school level. That the school principal must provide strong and effective leadership is frequently emphasized. School districts are urged to set high standards for promotion and to support rigorous enforcement of both academic and behavioral standards by principals. States are looked to for defining goals and offering moral and financial assistance to school districts. The Federal role in education is widely discussed, with general agreement only that it includes identifying and promoting the national interest in education, funding key student groups, doing education research, and collecting education data, statistics, and other information. Opinions differ, however, as to what is an appropriate amount of Federal funding for the key student groups, how many of the new

initiatitves being considered should receive Federal funding, and how much they should receive. In short, the source of funding to turn recommendations into reality is heavily debated.

Cooperation and interaction with colleges and universities and with business and industry are recommended in many forms. It is suggested, for example, that liberal arts colleges and academic departments should assume a greater role in teacher education and that colleges and universities should challenge secondary students with stiffer entrance requirements in higher mathematics and science. Both businesses and colleges and universities are invited to establish partnerships with local schools, their staff serving as occasional resources to these schools.

SUPPORT FOR THE CHOICE OF PRIVATE EDUCATION

An issue that has been debated in the Congress and argued before the courts during the past 3 years is the amount of support that may be and should be provided to the private sector in education. The Administration supports providing the equitable and comparable benefits to private school students and teachers that are required by law. The Education and Consolidation and Improvement Act (ECIA) of 1981 continued the requirement that the local school districts provide comparable services to eligible students in private schools.

The Administration has also supported proposed legislation that would provide new types of assistance to parents of private school students, notably in the tuition tax credit proposal and the education voucher program. The tuition tax credit proposal would create a Federal income tax credit to cover a portion of the cost of private elementary and secondary school tuition, with the credit deducted directly from the amount the taxpayer would otherwise owe. The credit would be phased in over a 3-year period and limited to a maximum of $300. Those who favor this proposal point out that the credit would help parents exercise some choice between public and private schools, that this increased choice would promote healthy competition between public and private schools, and that the credit would partially alleviate the inequity of the U.S. education financing system, which requires private school parents to pay local taxes to support public schools while also paying private school tuition.

The educational voucher program would provide greater access to private schools for low-income students by giving a voucher to the parents of any child eligible for Chapter 1 (compensatory education) funds in a local school district that chooses to establish a voucher system. The parents could use this voucher by enrolling their child in a private school or in a particular public school that offers an instructional program suited to the child's needs. Several States are also considering parental aid programs similar to the Federal tuition tax proposal and the education voucher program.

Another issue concerning private schools has stemmed from the increase of fundamentalist/evangelical Christian schools. Many of the educators in these schools believe that the State has no legitimate right to interfere with the mission of their schools, while several States have argued that these schools should be forced to comply with relatively stringent operative regulations, including teacher certification and State approval.

A clear role has yet to be defined for private schools in the current national efforts to improve the quality of education for this Nations' children.

3. TRENDS

The previous chapter dealt with some of the major recommendations put forward by the host of studies of U.S. education, by the Administration, and by individual educators. This chapter, dealing with trends, will give facts and figures concerning what actually is and has been happening during the last 3 years, both as a response to the recommendations discussed in the last chapter and also in areas where, although there may have been less sound and fury, there was nevertheless significant development.

STATISTICAL INDICATIONS

The level of educational attainment is continuing to rise, particularly among the younger population. More than 3 out of 5 of those graduating from high school in 1980 continued their education in post-secondary institutions, mostly in 4-year colleges. As of 1982 almost 86 percent of the 25- to 29-year-olds have completed at least 4 years of high school, and better than 1 out of 5 has gone on to complete 4 years of college or more.

Public concern with the quality of education led to demands for more rigorous curriculum requirements in secondary schools, and there are some indications that the number of mathematics courses taken by high school students has already started increasing.

Despite a decrease in the size of the college-age population, enrollment in higher education institutions continued to rise, largely as a result of the enrollment of greater numbers of women above the age of 25.

Concurrently, the enrollment of young children in preprimary programs continued to grow, with the participation of the 3-year-old rising from 1 out of 4 in 1979 to 1 out of 3 in 1982, at least in part due to the greater participation of women in the labor force, and to a greater interest of parents in exposing their children to organized educational or developmental settings at an early age.

In 1982, the Nation spent 7 percent of the gross national product on education, with the majority of funds continuing to come from governmental sources at various levels. While the Federal, State, and local governments increased their contributions to the rising cost of public elementary and secondary education, the Federal share dropped to 9.3 percent in 1980-81. The share provided by local governments has been dropping over the last 60 years and was surpassed by that of the State governments for the first time in 1978-79.

Level of Educational Attainment

The data on the number of years of schooling completed by the population reflect the steady progress of education over the last several decades. During the last 30 years, the proportion of persons aged 25 and over having completed 4 or more years of high school doubled, reaching the 71 percent mark, while the proportion with less than 5 years of elementary education dropped from over 10 percent to about 3 percent. During the same period, the proportion of persons with 4 or more years of college more than doubled, rising to almost 18 percent in 1982 (figure 2).

Substantial progress was made in raising the levels of attainment of males and females, whites, and minority groups.

Between 1970 and 1982, the proportion of persons aged 25 and over having completed 4 years of high school or more rose by about 17 percentage points for males, 15 points for females, 21 points for blacks, 15 points for whites, and 14 points for persons of Hispanic origin (table 6).

The results of education delivered in more recent years are reflected more clearly in the data for a younger part of the population, the persons 25 to 34 years of age. In this age group, high school completion has become the rule (86.3 percent), somewhat less than half of this group have had some college (45.2 percent), and close to one-fourth (23.8 percent) have completed at least 4 years of higher education (figure 3).

The number of degrees earned by students at higher education institutions has been fairly stable in recent years (table 7), but changes occurred in the distribution among the fields of study between 1971 and 1981. Bachelor's degrees in business and management increased by 77 percent in the last 10 years, while those in education decreased by more than 40 percent. Also during this period the award of first professional degrees increased by 65 percent, more than doubled in law, and increased by 71 percent in medicine.

Structure of Education

The only significant change in the structure and organization of education was the spread of middle schools, which almost doubled in 10 years, reaching a total of about 6,000 in 1980-81.

Largely as a result of the shrinking of the school-age population, the number of public elementary and secondary schools dropped from 90,540 in 1970-71 to 85,888 in 1980-81, with the average enrollment size of elementary schools decreasing from 408 to 378. The average enrollment size of secondary schools spanning grades 10 to 12 also declined slightly, from 1,177 to 1,123 in 1980-81. However, the number of teachers in elementary and secondary schools remained fairly stable, a total of about 1.4 million elementary and about 1 million secondary school teachers (table 8). The pupil-teacher ratio in public schools dropped from 22.3 in 1970 to 18.9 in 1981 (table 9).

The sustained growth in the number of higher education public institutions following World War II ended in 1981-82. The following year their number dropped slightly to a total of 1,493. The decrease was, however, more than made up for by private institutions, which increased in number during the same year from 1,755 to 1,787 (table 10).

The growth of instructional staff that had been particularly vigorous in the early seventies slowed down in the early eighties, and decreases are projected for the remainder of the eighties. In 1982-83, higher education institutions employed an estimated 721,000 senior instructional staff, including one-third (34.5 percent) on a part-time basis, according to the National Center for Education Statistics Survey of Employees in Institutions of Higher Education. In 1970 part-time staff had accounted only for 22 percent. More than one-fourth (27 percent) of the senior instructional staff teach at private institutions.

Enrollment

The lower number of births in the United States in the midsixties and the seventies resulted in a steady decline in the number of children enrolled in elementary and secondary schools. Between 1970 and 1982 enrollment in public schools dropped by over 6 million, or about 14 percent, while enrollment in private schools decreased less markedly, by an estimated 5 percent.

In 1982, a total of 39.6 million children were enrolled in public and 5.1 million in private elementary and secondary schools. About 90 percent of the 13.9 million students in grade 9 to 12 were enrolled in public schools, and the remaining 10 percent in private schools (table 11). The number of students enrolled in grades 9-12 in public and in private schools has been declining since 1975, when it peaked at 15.7 million (table 12). Enrollments in the lower grades are projected to begin increasing in 1986, with the decline in the upper grades persisting until the end of the decade.

Deviating from this pattern, the participation of children in preprimary programs continued to grow, rising from about 4.7 million in 1978 to about 5.1 million in 1982, and is projected to increase in the coming years in both public and private nursery schools and kindergartens. Nursery school enrollment was primarily in the private sector (about two-thirds), while kindergarten enrollment was overwhelmingly in the public sector (about four-fifths) (table 13).

In higher education enrollments reached a high of 12.4 million in 1982, with the share of part-time students steadily increasing as more persons past traditional ages for college enrolled in institutions. By 1982, better than 2 out of every 5 college students were enrolled on a part-time basis (table 14). Between 1972 and 1981 the proportion of women 25 years or older increased from 11 percent to 20 percent of the total college enrollment (figure 4).

In 1982, a total of 6.2 million persons were enrolled in postsecondary institutions other than colleges and universities. The enrollments in higher education are projected to decrease slightly through the late eighties.

A strong majority (63 percent) of all high school students enroll in a postsecondary institution within less than 2 years after their graduation from high school. More than half of them enroll in 4-year colleges or universities, over one-third in 2-year colleges, and the remainder in vocational/technical institutions. The students' rate of continuation of their education beyond high school varies much more with their level of ability, as measured by a cognitive performance test taken in their senior year, than with their sex or racial/ethnic minority status. Slightly greater proportions of girls than boys continue their formal education beyond high school, 66 as compared with 59 percent. Students of high ability are more than twice as likely to enter postsecondary institutions than those of low ability, and about three times as likely to enroll in 4-year colleges (table 15).

Foreign Students

Students are coming from foreign countries to the United States in increasing numbers to enroll in higher education institutions, primarily universities or 4-year institutions. Over the past 8 years their enrollment increased by over 50 percent, rising from 218,000 in 1976 to 331,000 in 1982 (table 16). During that year over one-third of the foreign students attended private institutions.

Foreign students working toward a first professional degree (e.g., in medicine or dentistry) enrolled exclusively at universities or 4-year institutions. Engineering and business are selected by foreign students far more often than any of the other fields of study.

Language Minorities

As has happened in the past, U.S. schools are faced with the task of improving the English-language skills of large numbers of persons (both foreign-born and born in the United States), particularly young children, in order to enable them to participate successfully in regular classes.

The number of persons with limited proficiency in the English language increased during the last decade, when substantial numbers of immigrants came into the United States, largely from non-English-speaking countries. About 4 out of every 5 immigrants in recent years have come from Latin America or Asia, according to the Annual Reports of the U.S. Immigration and Naturalization Service.

Between 1970 and 1980 the number of persons in the United States who had been born in Latin American countries increased by about 2.6 million, and the number of such persons born in Asia by 1.7 million. The rise in the number of the foreign born was most marked among the population under

25 years of age. The number of foreign-born children of school age more than doubled, increasing by about 1 million in the course of the decade (table 17).

Almost 10 percent of children between the ages of 5 and 17, or about 4.5 million, are living in households in which English is not the only language spoken. This number includes 650,000 children in households in which English is not spoken at all. About 86 percent of these children were reported by households in the 1980 decennial Census as speaking English "not well" or "not at all." The answers from Spanish-speaking households were somewhat less favorable with only 84 percent of children reported as speaking English well. Efforts are underway to measure more accurately the extent to which both native and immigrant children of foreign language background are of limited English proficiency and require remediation in school. (Education for persons with limited proficiency in the English language is discussed later in this chapter, in the section on education for special groups.)

RESPONSES TO THE CALL FOR QUALITY EDUCATION

Throughout the Nation, public and private actions by individuals and groups at local, State, and national levels are meeting the challenge to improve education. It is apparent from information collected from educators, State officials, and members of the public across the country that A Nation at Risk has had a remarkable impact at local, State, and national levels since its publication in April 1983. The release of other reports on education during the year has marked an unprecedented confluence of evidence and opinion from independent sources about the need to improve American education. The reports, while differing in certain emphases, have galvanized the Nation's debate over education issues.

Clearly, some State and local reform efforts were already underway prior to release of A Nation at Risk, particularly in the areas of graduation requirements, college admission standards, teacher certification, and mathematics, science, and computer literacy programs. This report will give only a summary picture of what had happened by the end of March 1984—the Federal initiatives to improve education and the actions taken by States and local school districts, the higher education community, and the private sector.

Federal Initiatives

The Federal Government has been responding to the call for quality education in ways that are consistent with the Administration's policy of returning as much control and funding of education to the States as is possible without sacrificing national priorities such as equality of opportunity and the proper Federal functions of research and data collection.

The most important Federal contribution has been in terms of very active leadership in education reform. Funding support, although limited, has been provided as required to stimulate and encourage State and local actions to improve U.S. education. This leadership by the Administration and the Congress has been demonstrated by initiatives to (1) help States develop a better salary incentive structure for teachers, (2) provide funding to the States through block grants that may be used for education improvements, (3) stimulate schools to teach foreign languages, (4) restore increased discipline to the schools, (5) encourage the cooperation of educators at all levels, (6) encourage States and local school districts to work for improvements of textbooks at the elementary and secondary levels, (7) reward secondary students who do good work with national recognition of their achievement, (8) fund programs that will produce more and better teachers in science and mathematics, (9) fund and disseminate research that will help schools provide better education, and (10) help discover effective ways to use technology for education, particularly mathematics and reading. These are some of the Federal initiatives taken by the end of March 1984. Because the Administration and the Congress view education as a priority for the Nation's future, there is little doubt that additional initiatives will be under way by the time this report is published.

Salary Incentive Structure

Secretary Bell has taken two important steps to help States establish salary incentive structures, for which he has always been a strong proponent. In March 1984, reporting that 33 States and the District of Columbia had made "encouraging progress" in implementing salary incentive plans, he announced that the Education Department would award more than $1 million to 51 schools districts, State education agencies, and other education institutions to assist them in developing and implementing such plans. He also released a "peer-review model" that school districts might adopt to manage career ladder, master teacher, or performace-based pay programs in elementary and secondary schools. At the same time, he reiterated the importance of making teacher salaries as competitive as possible within the limits of available tax dollars. He also made it clear that the model he offered was not "presented as a panacea, but as one model worthy of consideration, criticism and further refinement and improvement."

Block Grant Funds

Chapter 2 block grants were discussed in the chapter on legislation , which is chapter 1 of part II of this report. In the block grant program, which was first initiated in 1982, States may spend their allotment of Federal funds in any of the educational activities formerly authorized by 29 separate programs. The Administration requested $250 million more for this program in fiscal year 1985 so that additional money would be available to help States in their efforts to raise the quality of education.

As of March 1984, no evaluation of the block grant program has as yet been made to show how the States and local school districts have actually spent the funds appropriated to them by the Federal Government. However, a 2-year evaluation has been funded with a $1 million grant from the Education Department, and an interim report is expected during 1984. Meanwhile, the Secretary of Education has said that the Department does know that block grant funds are being used for such initiatives as teacher training, reducing dropout rates, developing curriculums, buying computers, and raising test scores. Furthermore, most State and local administrators of the program feel that there has been a reduction of the administrative burden on local schools and that State and local school officials are exerting more authority. The Secretary also reported that superintendents of some of the country's largest school districts have been almost unanimous in the opinion that adding money to the block grant program is the best way to help them raise educational standards.

The Administration's request for Chapter 2 block grant funds also includes the discretionary funds for the Secretary, out of which come the grants for teacher salary incentive systems, and funding to provide grants to States on a formula basis to pay part of the cost of training individuals who can become qualified within 1 year to teach science or mathematics at the secondary level. (It is expected that about 10,000 persons would be trained each year.)

Foreign Language Instruction

Secretary Bell has stressed the importance of foreign language study to the U.S. economy, which is increasingly involved in foreign trade. He also stated that the Administration's proposed budget for fiscal year 1985 reflects a broadened interest in languages. In an address in March 1984 to the annual convention of Teachers of English to Speakers of Other Languages, the Secretary stressed that U.S. education should not overlook the importance of minority language skills already present in the education system. He also expressed the Administration's desire to broaden the current definition of bilingual education that applies to Federal discretionary funding under Title VII of the Elementary and Secondary Education Act. The revised definition would allow districts that apply for funds to use a broader range of instructional approaches and to exercise more local control over bilingual programs.

Discipline

In early 1984, President Reagan brought to the fore[illegible]t the issue of school discipline, which had been addressed by many of t[illegible] studies of U.S. education. "Lack of discipline" had been reported by 15 annual Gallup polls as the number one concern of citizens in regard to elementary and secondary education. The President proposed that the Education Department study and publicize effective means of school discipline and that the Justice Department create a National School Safety Center to publish handbooks on school officials' legal rights in dealing with disruptive students and to aid local school districts in lawsuits. Meanwhile, teachers have already begun reasserting their right to be in control in

the classroom, with almost a quarter of them having been trained in the assertive-discipline concept that the teacher's word is law in the classroom.

Secretary Bell reiterated the Administration's commitment to helping with the school discipline problem in March 1984, saying that the Department would focus research and public attention on the problems of school disorder, with one of its National Institute of Education (NIE) regional education research centers studying prevention of school violence. He also said that the Department is working jointly with the National Institute of Justice to identify how local jurisdictions might better use their own resources to combat school crime.

Cooperation Among Educators at All Levels

In an address to the Association for Supervision and Curriculum Development in March 1984, Secretary Bell called on educators from kindergarten through graduate school to cooperate in developing a streamlined curriculum. He said that the present problem of a "fragmented and diffused system of learning" suggested "a need to develop new connections and curriculum continuity between the four great areas of American education: elementary, secondary, college and graduate." He proposed that traditional basic skills be taught at the elementary level, "academic basics" in secondary schools, liberal arts at colleges, and professional education and training in graduate schools.

Elementary and Secondary Textbooks

In a speech to the American Association of School Administrators in March 1984, Secretary Bell turned to the problem of elementary and secondary textbooks, which he said adhere too much to "readability formulas," leading to short sentences and unnecessarily low vocabulary levels in textbooks. He said that the percentage of education budgets spent on texbooks has declined nationwide despite an increase in total amount of money spent for education, and that the methods used to select textbooks and influence their content could often be improved. He emphasized the importance of textbooks, saying "Textbooks drive content, set the level of rigor, and influence the degree of intellectual challenge to students," since up to 95 percent of classroom instruction in the country is based on textbooks and related materials.

Secretary Bell then suggested that the textbook selection committees in a handful of large States with laws requiring centralized textbook adoption wield an inordinate amount of influence over the publishing industry. He challenged State and local educators to address the problems cooperatively, bringing pressure on the publishing industry to do a better job of writing and scrutinizing instructional materials. He mentioned that there had been a recent move by several Florida political leaders to establish just such an interstate consortium as he envisioned. (This initiative is discussed further in the next section, on the response of States and local school districts.)

Secretary Bell emphasized that the content of what is taught should not be decided by the Federal Government, but by States and local school districts. He urged creation of several large-scale regional centers to develop textbooks that would coordinate with computer software as well as influencing textbook content and style.

Awards to Secondary Students for Academic Excellence

The U.S. Department of Education will have presented approximately 600,000 awards to those graduating seniors in May and June 1984 who will have attained a high level of academic achievement and pursued a solid core of academic courses (estimated to be about 20 percent of the total number of students graduating). Recipients of the awards will have been given lapel pins and certificates signed by President Reagan, Secretary Bell, and the principals of the students' high schools. A limited number of awards will also have gone to students who did not meet the criteria but displayed extraordinary effort. The program is intended to become an annual one, similar to the program of the President's Council on Physical Fitness, which has been distributing awards since 1966. The Presidential Academic Fitness Awards program for future years has not been developed as yet, however.

Mathematics and Science Teachers

Another field of major Federal initiatives is the production of more and better teachers of mathematics as well as science. By the end of March 1984, no legislation had been passed, although numerous bills had been proposed in the Congress, the House had passed its own over-$400 million version of a bill on the subject, and the Senate was still considering still another version. The bills included such measures as formula grants to States to train math and science teachers, teacher incentive grants and scholarships, teacher institutes, and research on effective instruction, as well as matching grants with business and education groups.

Although no new legislation was passed by the Congress to upgrade teaching of science and mathematics, actions were taken to provide appropriations for various programs administered by the National Science Foundation. The Pre-College Materials Development, Models and Demonstration program, with an appropriation of $39.7 million, includes research on how science and mathematics are taught and learned, models and demonstrations of innovative teacher-training programs that emphasize scientific and technical content and use of new technologies, and development of new materials for science teachers to use in improving their instruction. The Presidential Awards for Science and Mathematics Teaching Excellence program, with an appropriation of $3 million, recognizes the best math and science secondary school teachers in each State. The Teacher Honors Workshops, with an appropriation of $12 million, supports local or regional workshops emphasizing cooperation with business, industry, and higher education institutions. The Presidential Young Investigators Research Awards program, with a rising appropriation from an original $6 million the first year, makes 5-year grants to young Ph.D. faculty in math

and science fields where demonstrated needs exist for research support to encourage their commitment to an academic career. Finally, the Graduate Research Fellowships program, with an appropriation of $20.3 million, encourages highly talented graduate students to pursue advanced studies in the sciences and engineering.

Other Initiatives

Education research (other than that already mentioned) funded by the Federal Government will be discussed in chapter 4 of this part, while Federal initiatives concerning technology and science in education are dealt with in the next major section of this chapter.

Still other initiatives include:

o Establishment in the Department of Education of a Task Force on Private Sector Initiatives, which has presented a plan to the Secretary with recommendations to accomplish a Department goal for 1984 set earlier by the Secretary; namely, "to increase incentives to foster greater private sector involvement . . . to enhance the overall quality of education in this country through more volunteerism and by creating working partnerships with schools, business, and community." (In line with this goal, both the White House and the Department of Education have formed partnerships with local schools in the District of Columbia, as mentioned later in discussion of Adopt-a-School programs as part of the communities' response.)

o A grant of $105,000 from the Secretary of Education's discretionary fund to the American Association of Colleges for Teacher Education (AACTE) so that "the organization responsible for teacher education could look at itself." AACTE membership includes 735 higher education institutions that provide teacher education, which represents about 60 percent of the total. The goal of the project will be to develop an action plan to improve standards for selecting prospective teachers and programs for educating them. For this purpose, it will organize a national commission, hold regional hearings, and prepare a final report that will include a plan for followup activities.

o Publication of A Blueprint for Educational Excellence by the National School Boards Association to assist school board members in responding productively to the national studies of U.S. education. This 60-page guide, funded as part of a $98,000 grant to NSBA from the U.S. Department of Education, consists of nine chapters that offer guidelines to help school boards develop a definition of excellence in their own schools and bring together the elements necessary to meet defined goals.

o Establishment of a National Commission on Secondary Vocational Education to study how high schools prepare students for work. Under terms of a 5-year research contract between the National Center for Research in Vocational Education and the U.S. Department of Education, the 14-member commission plans to hold hearings in nine cities and produce a final report in January 1985.

o Secretary Bell initiated a Secondary School Recognition Program, beginning with school year 1982-83. Panels of volunteer educators travel among middle, junior, and senior high schools to judge which are the best in the Nation according to 14 "attributes of success." Then the principals and superintendents for the winning schools come to Washington to be honored for their achievements.

o Still another awards program is the Secretary's Awards for Outstanding Vocational Education Programs. Initiated first for school year 1980-81, this program highlights examples of excellence in vocational education programs at the adult, secondary, and postsecondary levels. Criteria include "hands-on" epxerience in shops or at worksites, cooperation with business, industry, and labor, and job placement rates. Nominations are submitted through the Department's 10 regional offices, which send teams including local business and industry representatives to inspect the programs. A panel of experts in each region in turn selects the three outstanding programs, from which the Assistant Secretary for Vocational and Adult Education chooses one for the award for that region.

Responses of States and Local School Districts

Major education reforms are underway throughout the country. A total of 165 State-level task forces have been established in 50 States, according to the Education Commission of the States' count in mid-November 1983. Many States have taken a comprehensive reform approach, while others have focused on particular aspects of the education reform agenda, such as curricular standards or teachers incentives. Also, in the effort to achieve reform nationwide, five leading State-level education associations have joined forces to facilitate use of recent research findings and other information for their members. (The associations are the National Association of State Boards of Education, the National Governors' Association, the National Conference of State Legislators, the Council of Chief State School Officers, and the Education Commission of the States.)

The diverse groups represented on the State task forces illustrate that the currrent drive for reform is not merely an education debate among professional educators. It is a broad-based political debate among parents, educators, legislators, employers, and other citizens about all of our children's futures. Proposals are before State legislatures for increasing education revenues, raising graduation requirements, increasing standards for teachers, streamlining curriculums to include a higher proportion of "basic" courses, raising classroom teachers' salaries, and a host of other strategies for improving education at all levels. An important fact is that these proposals are being put forward by politicians--Governors and State superintendents. Educational excellence has progressed beyond the stage of concepts and reports and has entered the arena of action in States and local school districts.

While actions of the 50 States can be and have been traced and summarized individually, the response to the call for educational excellence among the approximately 16,000 local school districts is so varied that only broad generalizations can be made. According to the reports to the Secretary prepared by the National Commission on Excellence in Education, local initiatives range across six categories of effort: Establishing local commissions and study groups; checking local status against the recommendations of the national reports; making changes in local policies or programs in the specific areas addressed in the reports; capitalizing on public interest in education to gain support for the local schools; undertaking comprehensive planning efforts; and carrying out comprehensive reforms of the school programs. (It is interesting to note that the number of women on local school boards increased 9 percent from 1982 to 1983 and 12 percent from a decade ago. They now constitute 37.1 percent of the Nation's approximately 95,000 school board members, according to a recent survey by The American School Board Journal.)

Increased Control of Funds and Programs

With strong encouragement from the current Administration and a growing number of high-level national task forces and educational commissions, local and State governments are taking an increasingly active role in controlling the quality and direction of this country's schools. Although the legal responsibility for public education has always resided with the separate States, since the post-Sputnik years the Federal Government has become a powerful force in U.S. education and its nearly 150 different congressionally authorized programs have pervaded almost every aspect of schooling. As stated earlier, the Federal share of education funding is only about 9 percent of the total, a level that has remained fairly steady over the past decade, but that modest sum has been targeted in such a way as to give it unusual leverage and influence over local education programs. Highly visible and sharply targeted Federal initiatives have sometimes had a disproportionate influence on State and local school policy. The problem was compounded by the fact that, in many States, large percentages of the State education department staffs were supported by funds from Federal programs.

There is now a very deliberate and, to date, very successful effort to diminish this inappropriate influence and return the full control of public education to State and local governments. As reported in the chapter on new Federal education legislation (part II, chapter 1), the Administration has sought to combine as many discretionary programs as possible into block grants that will allow local educators to shape programs in ways that will best serve their specific needs. The legislation affecting these changes and the program carrying them out are referred to as "Chapter 2" and "Chapter 2 grants," respectively. In those cases where for one reason or another it has not been possible to merge programs into blocks, funds are being more directly channeled to States and every attempt is being made to diminish the Federal role in the implementation of authorized programs.

Recent studies by the Department of Education's School Finance Project have shown that the efforts to give State and local governments more control over their own programs are succeeding, as evidenced by the following:

- o States and localities have become more active participants in shaping Federal-funded services provided in schools. Although Federal activities are designed as top-down assistance strategies, the manner in which they are now being implemented reflects an intergovernmental system with responsibilities shared by all levels of government.

- o LEA's and schools are not passive executors of Federal policies and programs. They are transforming Federal policies, which are generally characterized by a regulatory orientation, into educational services. Within the statutory and regulatory constraints imposed by the Federal Government, local officials are exercising discretion in allocating Federal resources, designing Federal-funded services, and assigning students to specific services.

- o At the local level, federally funded education services reflect an accommodation between Federal interests and priorities, as mediated by the State political and institutional environment, and local interests and priorities.

- o State education agencies have become less regulatory and more technical-assistance oriented. Partnerships between State and local educators have been strengthened.

- o Other parts of State governments have become more actively involved in the educational arena, and, in most States, Governors and State legislatures have given increased attention to education.

Additional Financial Support

Average State support for education at all levels increased over the 5-year period between 1978 and 1983 at a rate that exceeded the rate of inflation. A report by the AVA Education Policy/Planning Services of Denver stated that for public elementary and secondary education, the total increase from States was $22 billion, representing a gain of 62 percent; and that for colleges the increase was $9 billion, or a 59 percent rate. The report also pointed out that there was great variation among States.

Over the 2-year period from 1981 to 1983, the increase in State funding has been about 12 percent for colleges and universities, for a total of $25.4 billion appropriated by the 50 State legislatures. Adjusted for the 9.8 percent inflation rate in the last 2 years, however, the rate of real gain was only about 2 percent.

The problem for the States and local school districts is how to increase funding for education at the same time that additional funds are being demanded by broad political and cultural movements outside the realm of education. Since the 1982 nationwide increase in local property taxes (the source of local income for public schools) was 13.7 percent, the largest in 50 years, the question is whether citizens will be willing to pay still higher local taxes in order to improve education in their areas.

Meanwhile, State Governors are giving high priority in their budgets to education at all levels. Almost every Governor has been asking for programs to improve elementary and secondary education, with an emphasis on more money for training teachers of science and mathematics. Some of the proposed increases might come from increases of State revenue that occur as the economy improves, but in many States an increase in State taxes would be necessary and many Governors are recommending this step. As of December 1983, 36 States had increased their taxes for an overall total increase of $7.1 billion. Often State spending for public schools and higher education account for about half of a State's total operating budget.

A meeting of the Intergovernmental Finance Project of the National Conference of State legislatures was held in December 1983 to attempt to deal with the problem of how excellence in education can be financed without sacrificing recent efforts to equalize State aid. The Director of the Project expressed some concern that past tax increases might spark a citizen protest. Several States have taken an indirect route, raising State sales taxes to pay for school reforms, which, according to a recent survey by the Advisory Commission on Intergovernmental Relations, is perceived by 57 percent of the taxpayers questioned as the best way for States to raise taxes "substantially."

Higher Graduation Requirements and Curriculum Changes

Before 1983, State legislative efforts to improve curriculum standards had focused primarily on adopting student competency tests. During 1983, the most frequent legislative initiative to improve the curriculum was the strengthening of basic course requirements, with almost all States having increased the number of graduation requirements, some up to 22 units of credit. The second most frequent initiative was lengthening the school day and/or the school year, which is usually between 175 and 180 days, depending upon the State. This latter initiative, however, has received very little support in many States because of the cost factor. Many States have also taken action to raise college admission standards and to increase student evaluation or testing.

Curricular changes have generally been toward requiring more units in the basic fields and eliminating courses deemed less essential. The trend has been toward the type of requirements recommended by A Nation at Risk--4 years of English, 3 years of mathematics, 3 years of science, 3 years of social studies, and one-half year of computer science, with a strong added recommendation that those students planning on entering college elect 2 years of a foreign language. During 1983, a total of 11

States introduced legislation to upgrade requirements in math, English, foreign languages, and computer literacy; 5 States enacted laws to tighten basic requirements; and 16 State education boards set new curriculum standards. The American Council on the Teaching of Foreign Languages, from evidence discovered during an enrollment survey, predicted a national trend toward higher enrollment in foreign languages, and the Louisiana State Board of Elementary and Secondary Education adopted a new policy requiring school districts to use 30 minutes every school day to teach foreign languages to academically able students in grades 4 through 8.

A related effort has been made by the States concerning textbooks. The education committees of the Florida State Legislature, together with the Governor's office and the State education agency, invited the Nation's chief State school officers, legislators, and publishers to meet in March 1984 to discuss upgrading and updating textbook quality to assure more rigorous content. Twenty-two States sent representatives to the meeting.

Steps To Improve Teaching

Before 1983, State efforts to improve teaching focused on adopting teacher competency tests. According to a report from Western Kentucky University, as of fall 1983, 30 States had approved testing programs and 12 were studying the possibility of developing testing plans. All but 3 of the 30 were enacted after 1977. The extent of the testing programs varies. For example, Arkansas last fall passed a controversial measure requiring all teachers and administrators to pass basic-skills and academic-subject examinations by 1987 or risk losing their jobs, while, at the other extreme, Wyoming has no State testing law, but regular testing of prospective teachers is required by the only education college in Wyoming. According to the same study, U.S. educators now tend to favor evaluation of prospective teachers but resist evaluating experienced ones.

During 1983, the most frequent legislative initiative to improve teaching was providing additional training or education for teachers in high demand areas, such as mathematics, science, and computer science. "Forgiveable loans" for prospective teachers in these areas are under consideration by many States, while others are setting up scholarships and programs for retraining teachers. The second most frequent initiative was enacting policies that would either assist inadequate teachers to improve or provide for their dismissal.

By the end of 1983, legislators in 15 States had introduced bills to improve teacher training in mathematics, science, and computer sicence, and 9 States had enacted such legislation, according to reports from the National Conference of State Legislatures. No State in the survey had taken such action before 1983. Several States also considered allowing teachers without science and math certification to teach those subjects.

Much attention has been given to raising the level of compensation for teachers, both across-the-board and in relation to the quality of performance (as in "merit pay," "career ladder," and "master teacher" plans). Although by the end of 1983 only 6 States had granted salary

increases for starting teachers, by March 1984 a total of 33 States had adopted or were considering adopting career ladder plans. It is expected, however, that many more States will adopt such salary incentive structures during their legislative session in 1984. As was noted in the previous section on Federal initiatives, Secretary Bell has strongly endorsed such plans, prepared a peer-review model for managing systems of performance pay in elementary and secondary schools, and offered grants to help develop and implement them. The teachers associations have been cautious about endorsing such systems, however, fearing favoritism in the decision-making process and a substitution of merit pay for a higher base pay. A Gallup poll in May 1983, howver, found that those polled were in favor, by a 2 to 1 margin, of paying individual teachers based on the quality of their work.

The end-of-year National Conference of State Legislatures survey noted that States "are not pursuing a single path toward educational excellence. . . but vary greatly in their approaches to teaching and learning."

Response of Educators

Education Associations

In November 1983, a unified response was made to the studies of U.S. education by 11 major education associations, joined together in the Forum of Educational Organization Leaders (FORUM). Membership consists of the two top elected officers and the executive director of the American Association of Colleges for Teacher Education, the American Association of Schools Administrators, the American Federation of Teachers, the Council of Chief State School Officers, the Education Commission of the States, the National Association of State Boards of Education, the National Association of Elementary School Principals, the National Association of Secondary School Principals, the National School Boards Association, the National Congress of Parents and Teachers, and the National Education Association.

The moderator of the FORUM conference noted the diversity of its members and said that, although they did not agree on all points, there was substantial agreement on the positions taken in the position paper that was released. That paper welcomed the reports on U.S. education and supported a full debate on all issues by decisionmakers at all levels of government.

Specific agreements focused on five areas. Concerning tougher standards and curriculum review, a series of prescriptions listed the knowledge and skills that students graduating from high school should have and said that schools should insist upon compliance with standards established by their local school boards concerning discipline and other matters. Another area was quality use of time. FORUM recommended a review of current use of time and recommended that homework be considered along with other options. The third area, testing and evaluation, brought strong support for testing of students and for requiring prospective teachers to

pass a subject matter and basic skills test as one of the criteria for certification and employment. Many suggestions were made concerning the teacher's role and compensation, including higher base pay schedules, establishment of a career ladder, and new financial and professional reward systems. In the fifth area, recruitment, retention, and removal of personnel, FORUM emphasized that career teachers must be involved in instructional program planning and that only teachers whose performance is judged satisfactory should serve in the public schools.

The National Education Association (NEA), the largest teacher organization in the country, was not among the education associations represented in the Forum. In July 1983, however, the NEA's Representative Assembly established a Blue Ribbon Task Force on Educational Excellence, which has been holding hearings since fall. Its preliminary report is to go before the Assembly in May 1984.

A different note was struck by participants in a March 1984 meeting of the Association for Supervision and Curriculum Development (ASCD). Concern was expressed that the emphasis on a basic curriculum in most of the studies of U.S. education could result in a standardization of curriculum, and that vocational education was largely ignored in the studies. In a resolution, the ASCD acknowledged the call for a return to "old-fashioned" discipline in the schools, but said that, "recognizing the failure of repressive and obsolete discipline practices, ASCD reaffirms its belief in developing approaches to discipline which are more likely to foster self-controlled individuals and a democratic citizenry."

Meanwhile, the National Association of Secondary School Principals (NASSP) has been conducting a 2-year trial program of evaluation centers that test candidates for school administration posts. Its national validity study tested 425 persons between 1979 and 1981, confirming the connection between success in evaluation tests and success on the job as a school principal or assistant principal. The NASSP initiated the project in 1975, expanding it gradually to include 19 centers with 200 school districts, intermediate offices, or universities. Evaluation procedures are patterned after those used in business and military organizations. New centers are to be added for school systems qualifying for the project by accepting the NASSP standards of quality, submitting an organizational plan, and signing a multi-year participation agreement.

Teacher-Education Institutions

Almost all (94 percent) of U.S. schools, colleges, or departments of education (SCDE's) have implemented one or more measures to improve the quality of teacher candidates during the past 5 years, according to an October 1983 survey conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). The survey was designed to obtain the opinions of heads of the SCDE's regarding the recommendations of the the National Commission on Excellence in Education and to discover which of these had been implemented during the last 5 years.

When asked about measures instituted to improve teacher candidate quality, over four-fifths (85 percent) of the SCDE's reported making the curriculum more rigorous during the time period, and almost three-fourths (74 percent) had raised the criteria for entering the teacher-education program. About one-half highly preferred these measures. Increasing professional studies was perceived as least important, while 71 percent considered additional general studies as highly or moderately important. Of these 71 percent, 79 percent felt that language/communication skills was the field to be increased, followed by 65 percent for mathematics and 45 percent for science.

Although another method for improving teacher quality that has been widely recommended was extending teacher education beyond 4 years, SCDE heads gave it little support, with only 5 percent having extended their programs and only 15 percent having a high preference for doing so. One of the SCDE's that has extended its program is the College of Education of the University of Florida, which has a new program called "Proteach." When established, the program will require all education majors to spend 5 years in classes and in practice teaching before graduating with a master's degree. The College of Education is also replacing a lot of education courses with subject matter courses.

Another version of extending teacher-education programs was suggested by the Washington (State) Education Association. It proposed that future teachers first be required to obtain their bachelor's degree and then spend 2 or 3 years studying teaching methods, learning practical aspects of teaching such as using audiovisual equipment, practicing teaching in a school under the tutelage of a master teacher, and studying further in the basic field.

Improving teacher preparation in order to upgrade the profession is supported by the two major teacher organizations--the National Education Association (NEA) and the American Federation of Teachers (AFT)--although their emphases differ. An experiment in Ohio conducted by the AFT offers an example of the organizations' initiatives. It is called the Toledo Project and is designed to weed out teachers from the ranks who are not doing a good job.

Attracting a larger number of intelligent students into the teaching profession has been approached in various ways. The National Center for Education Statistics projects that the demand for more teachers will surpass the number of new teacher graduates by 28,000 in 1985, 31,000 in 1986, and 15,000 in 1987. One encouraging sign, however, is the increase in the number of incoming college freshmen interested in teaching as a career after a 15-year decline, according to a report of the American Council on Education and the Higher Education Research Institute at the University of California at Los Angeles. One SCDE, Trinity University's College of Education (in San Antonio, Tex.) is initiating a 6-year, $30,000 pilot program that will accept 10 graduating students from the top 10 percent of their class at San Antonio high school. Each student selected will qualify for $22,000 in loans, which will not have to be

repaid if the student graduates from Trinity and teaches for 2 years. Furthermore, the new teachers after graduating will receive $2,000 per year for 2 years as a supplement to their salaries.

To help provide a quick solution to the problem of an insufficient number of math and science teachers, Harvard University Graduate School of Education is offering a master's degree program to individuals who have already completed undergradute and/or graduate work in math and/or science and who have been employed in nonteaching fields. After 1 year, graduates will be able to teach math or science in grades 7 to 12 in Massachusetts and 30 other States. Training will include techniques of classroom instruction, teaching in different educational settings, and the use of microcomputers in math and science classrooms. Harvard's program, which represents an attempt to put into action an idea recommended by several of the studies on U.S. education, received a favorable report by Albert Shanker, president of the AFT, in the New York Times on August 28, 1983.

Response of the Community

General Education

The private sector is currently contributing between $1 billion and $2 billion a year to public schools, according to an estimate by the Council for Financial Aid to Education. (This figure does not include contributions to higher education institutions.) The sources of private sector donations to education are widespread, including the recently formed private education foundations, large foundations, corporations, and businesses. Colleges and universities are also making their contributions of time and funds, both alone and in association with each other and businesses. Another indicator of public interest is the increase of 70,000 in the membership of the National Parent Teacher Association (PTA) over the past year after a 20-year membership decline. While educators welcome the private sector's participation and financial support, there is some concern that the financial support may lessen the public's commitment to providing sufficient funding for quality education through governmental channels.

Private education foundations.--An estimated 350 private education foundations have been established in the last few years, according to a report in the November 15, 1983, issue of the New York Times. The new foundations, formed by local school boards, business people, and other community members interested in aiding local elementary and secondary schools, have focused on initiatives and projects that would probably not be funded by local school boards.

The first nonprofit foundations were established in the late 1970's after the voter-initiated Proposition 13 was enacted in California to sharply reduce the amount of taxes that could be levied by local school districts. Contributions to the foundations are tax-deductible. In the last several years, reflecting the growing public concern nationwide about the quality of U.S. education, the movement has spread across the country in widely differing forms. Recently it has begun to move to the State

level, as in West Virginia. The West Virginia Education Fund plans to make grants of about $300 to innovative teachers and larger grants of about $2,500 to county superintendents.

In February 1983, the Public Education Fund was founded in Pittsburgh with the help of the Ford Foundation as a national clearinghouse for information about public education foundations, to give technical assistance to persons and groups trying to establish them, and to support and promote local education foundations. In November 1983, six new foundations received awards totaling $360,000, as part of a 5-year $10 million program.

Large foundations.--Generous support for education at all levels has been given by large foundations. Examples of recent contributions are the following:

o The Ford Foundation has given a $350,000 grant to the College Board for a 3-year study of student financial aid policies as they relate to the changing needs of the U.S. economy and as they affect minority and low-income students.

o The Carnegie Foundation for the Advancement of Teaching has sponsored the Carnegie Grants Program for High School Improvement, which is funded by the Atlantic Richfield Foundation and administered by the National Association of Secondary School Principals. In April 1984 the $1.7 million grants program will have awarded about $3,000 each to 200 high schools to finance faculty, school board, and parent discussions about school improvement as part of an "action plan" based on the Carnegie High School report. A second part of the program will give grants of up to $200,000 to 20 schools to implement recommendations from the Carnegie report.

o The Ford Foundation will award $7.6 million in grants over the next 2 years to schools, colleges, and others looking for solutions to the problems of migrants and refugees. Activities supported will include research and policy analysis of migrant and refugee issues, programs to help these groups become economically self-sufficient, and public education programs to promote discussion of the issues involved.

o The Ford Foundation is sponsoring a $6 million program over 5 years to help teachers in urban schools improve their programs.

o The Exxon Education Foundation gave a grant to establish Impact II in New York City. This program helps talented teachers to develop ideas and share them with other teachers. Impact II has since spread to private schools in New York City and to the Houston public school system. It offers grants of $200 and $300 to teachers who have developed a new course or method of teaching, gives grants to encourage other teachers to develop already existing Impact II projects for their own classrooms, and holds conventions and workshops as a way to establish a network of experienced teachers sharing their ideas.

o The Carnegie Corporation of New York has awarded a $224,000 grant to the Education Commission of the States for a 2-year program to help government and business leaders improve education.

Corporations.--In 1982, corporate support of education totaled about $1.3 billion, up 20.4 percent from 1981, according to an estimate by the Council for Financial Aid to Education (CFAE). Of the 534 major corporations surveyed, grants to higher education institutions represented 69.2 percent of the total. However, the number of companies giving some funds to precollege education had risen considerably over the past 3 years. Corporate donations to education were estimated at 40.7 percent of total corporation giving to all causes.

Recent corporate contributions included the following:

o Phillips Petroleum is funding a $6.7-million film project to enhance math teaching. The series of seven 18-minute films, called "The Challenge of the Unknown," is designed to be used from about grade 5 through college-level remedial math classes and will be offered free to schools. It will be produced by the American Association for the Advancement of Science. The plan is to show the films to 3 million students a month for 10 years. The series will emphasize how math solves practical problems and so build a desire to study more mathematics.

o The Atlantic Richfield Corporation has a $2.5 million grant program to improve schools across the country.

o The Xerox Corporation donated $200,000 worth of copy machines to the Fairfax Education Foundation.

Other contributions by corporations for other purposes, such as technical and scientific education, are mentioned elsewhere in this report.

Businesses.--In January 1984, Secretary Bell reiterated President Reagan's call to business leaders to create more partnerships with the schools. The Administration has played a very important role in making Americans more aware of the already high commitment of the private sector to quality education and has been helping to expand these efforts. A recent analysis of 55 leading studies of such partnerships showed that 7,146 companies are now involved in partnerships, with 27 percent in existence for from 10 to 20 years. Examples of such partnerships include the following.

o The Leadership Education and Development (LEAD) program received funding totaling $450,000 from 80 companies during 1983, according to U.S. News & World Report. In this program, business-oriented minority students in grade 11 were assigned to participating universities to listen to lectures, work with case studies, and tour businesses. Thirty-five percent of former LEAD students have gone on to become business majors in college.

o The Invest-in-America National Council receives about $500,000 each year from 360 companies to fund classes at participating campuses, where economists and business and financial leaders conduct classes as guest speakers. The purposes are to improve the image of big business and to teach basic economics and its impact on consumers and companies.

o Public schools in Washington, D.C., have recruited 11 major corporations to establish a management institute designed to help principals and administrators manage school business.

o Business community leaders in Boston, Mass., have initiated an agreement with 25 colleges and universities in the area (including Harvard University, Boston University, and the Massachusetts Institute of Technology) that will help area students acquire a college education. In this agreement, the Boston School Committee ensures that public school graduates will have received courses that will adequately prepare them for college, the colleges and universities will aggressively recruit the high school graduates, help them find additional sources of financial aid, and work to support them once they start college, and the businesses will make a special effort to hire them. Admission requirements to the higher education institutions will not be relaxed under this agreement.

Possible benefits to businesses of partnerships with schools were listed in an article by Joseph Scherer and Bob Brown in the October 1983 issue of The School Administrator. They include public relations, tax benefits, better entry-level employees, development of markets, development of materials such as software, influence on career choices, recruitment of employees, providing economic education, developing better citizens, making a profit through school contracts, and improving employee morale. There is also the altruisitic motivation of acting as a group of good citizens.

Adopt-a-School programs.--Civic groups, businesses, trade unions, and other groups are beginning to participate in school affairs through Adopt-a-School programs. Participation by members occurs in various ways, including tutoring, donating money for specific projects, counseling students, organizing field trips, and speaking to classes about the member's specialty. These programs are being established throughout the country. In the Los Angeles Unified School District alone, there are nearly 220 corporations, nonprofit service organizations, and other employers who have adopted schools.

As mentioned previously, President Reagan has urged all Federal departments to adopt schools in the Washington, D.C., area. The White House and the Education Department are two agencies that have done so.

Vocational Education

Changes in technology, concern for increasing productivity, and emphasis on reindustrialization have all acted to emphasize the need for cooperation between business and industry and vocational education.

Educational and financial benefits multiply when vocational education institutions and business and industry share facilities, equipment, materials, and personnel.

Both education and business and industry reap the rewards of collaborative efforts. Benefits to the private sector include a source of potential employees trained to its need and cost-effective training for present employees. Benefits to education are received by both students and institutions: students receive up-to-date training, experiences to relate theory to practice, and often job opportunities, while educational institutions achieve improved and updated instructional programs, have instructors who are current on state-of-the-art practices, and receive financial and other resource support.

A recent national study revealed that exemplary practices of business and industry and vocational education cooperation in sharing resources are prevalent and diverse. The cooperative activities identified by the study ranged from postsecondary occupational education occurring on fishing trawlers in the Gulf of Mexico to a power plant in Montana, and to the distinctive technologies of saddle making and stringed musical instrument repair within one institution. Diversity is caused by the spread of employer needs, both nationally and within each institution's service area. Facilities, equipment, materials, and personnel are being shared to the mutual educational and financial benefit of industry and education.

The thousands of collaborative practices occurring across the Nation can be organized into 10 categories:

- o Apprenticeship Training: These programs involve cooperation and sharing among a company or industry, a labor union, and secondary and postsecondary institutions toward the common goal of preparing apprentices.

- o Jobs Training Partnership Act (JPTA) Programs: The major focus of these programs is the training of JTPA participants. Usually they involve the collaboration of the JTPA administrative council, private industry, and colleges. Many also involve community councils and other community organizations and agencies.

- o Community-Wide Collaboration: Programs in this category involve the collaboration of numerous community organizations and institutions with the schools and colleges to provide training and educational services.

- o Community-Based Education: The dominant feature of these programs is that they are based out in the community, using the community as a resource.

- o Contract Services for Industry: In each of these collaborations, industry contracts with vocational schools or colleges for education services, which may be held either in-plant or on the campus.

- Cooperative Education and Field Experiences: Business and industry provide employment or field experiences in the students' field of study while they are enrolled in school and receiving job-oriented instruction. Supervision is provided by both industry and the school.

- Economic Development Services: A State or city economic development agency, new or expanding industry, and the vocational education institutions cooperate to provide a pool of trained persons to fill employers' needs. These programs are designed to attract new industry to the community or help present industry expand, so that new jobs are created in the community.

- Faculty "Return to Industry" Programs: In these personnel exchange programs, vocational education instructors update and upgrade their technical competencies by returning to industry. In exchange, industry personnel are often brought to the vocational institution.

- Program Development Sharing: These programs involve a sharing of resources by industry with a vocational education institution to start and keep current a technical program. Industry may provide its expertise, equipment, and materials.

TECHNOLOGY AND SCIENCE IN EDUCATION

Technology in Education

Educational technology in its best application is a resource tool for the learner and teacher, used when and where it is needed as a unified and integral part of the daily school activities. Unfortunately, technology is still frequently designed not as a part of the education system, but outside the mainstream of education and not in relation to the textbooks upon which the essential standards of each field are still based.

Elementary and Secondary Education

Despite less than perfect use of computers in U.S schools, there has been a broad movement to make microcomputers accessible to students at all levels and a consensus that it is necessary that all young persons become "computer literate." Parents and students, with the support of teachers, have been the driving force in the acquisition of computers by the schools. Parent-Teacher Associations purchased approximately half of all the computers presently in the schools, reflecting the strong home support for computer use and enhancing improved school-home-community linkages.

The number of microcomputers in public elementary and secondary schools increased more than tenfold in about 3 years, rising from 31,000 in November 1980 to about 325,000 in September 1983. In 1983 microcomputers were available to students in 62 percent of public elementary

schools, 81 percent of junior high schools, and 86 percent of senior high schools. The number of microcomputers averaged 4 per elementary school, 7 per junior high school, and 11 per senior high school. (It is also interesting to note that about 10 percent of all households--about 8 million--had personal computers at the end of 1983.) In California, manufacturers have donated 10,000 microcomputers to the schools--at least 1 to each school--under a 1982 tax credit law.

School systems across the Nation are investing millions of dollars in computer equipment and related software programs. According to a 1983 research study, it was estimated that schools would spend $700 million on technology equipment in that year. Chapter 2 of the Education Consolidation and Improvement Act provides funds to States and local education agencies to support programs in any of 28 different education topics, with the choices largely left up to them. The largest single use of the funds to date has been for computers and related equipment.

Private corporations have also helped in the computer effort, most notably International Business Machines (IBM), which has mounted a $12-million effort to increase computer use in the schools through donating computers to them and providing training in their use for teachers. During 1983, IBM gave 1,500 computers to schools in New York, California, and Florida.

Despite the many new microcomputers coming into the education system, there are still not enough machines in the classroom to trigger reform in the large-group instructional patterns for which the microcomputer is best suited and most valuable. There are some notable exceptions, as in Forest City, Iowa, and in Princeton, New Jersey. At present, however, computers are most frequently used in computer awareness or literacy courses, for remediation and drill for teaching basic skills, and to offer learning enrichment. Computers are also being used in schools for administrative purposes, according to a survey of 1,200 classroom teachers who reported such use in 65 percent of their schools. However, a national survey on schools' use of computers in the middle of the 1982-83 school year indicated that about three-quarters of the schools that own computers leave their machines idle for more than half the school day, many of them using them for only about 1 hour a day.

Many States are taking steps to help schools make the best use of computers. In the last 3 years, 40 States have adopted a computer policy. Seven had such a policy previously. These instruments provide guidance for local school districts, from teacher training to software selection. In the States with computer policies, about half were introduced by the State board or department of education, with help from local teacher experts, and the rest were written by the Governor or State legislature. Some statewide task forces also design training and demonstration centers.

While computer hardware is becoming more available, the quality of the software remains a matter of concern to many. According to almost all surveys on the subject, the majority of school computer users are dissatisfied with the amount and quality of software available for instruction.

They claim that too much of the software is just an extension of what was done in the past, and that there is a need for software that builds upon the unique capacity of computers to stimulate logical thought and to provide information.

Certain major events in the last few years have, however, moved U.S. schools a little closer to better use of computers in the schools. For example, the U.S. Department of Education sponsored four national teleconferences on the uses of microcomputers in schools. State and local education agencies nominated 123 school systems that had been using computers for more than 2 years, and 8 of these were selected for documentation by television of their experiences.

Also, at the end of 1983, the Department of Education awarded more than $1.5 million to 12 elementary and secondary school technology demonstration projects that showed how best to use microcomputers and other electronic devices in a wide variety of school situations. Secretary Bell's goal was to suppport grass roots movements in their efforts to use technology to improve student achievement. The 12 projects serve a wide variety of students, ranging from economically disadvantaged elementary school children in a California school to gifted students in a Massachusetts Education Center. The demonstrations sites are urban, suburban, and rural school districts, as well as consortia of school districts, universities, and businesses.

The Department has also funded new courseware in math, elementary reading, writing, and science, while the National Education Association (NEA)--the largest teachers organization--has produced a directory of educational software that is "teacher certified by the NEA."

Five new educational television series have also been funded by the Department of Education, with all of the programs available for reproduction off-the-air and retained for supplemental classroom use. All are also close-captioned for hearing-impaired persons. The group includes "Moving Right Along," a series of 10 half-hour shows about communication problems between teenagers and their parents; "Spaces," a series of 6 half-hour programs to stimulate interest among minority students in careers in science and technology; "Rainbow Movie of the Week," a series of 10 one-hour dramas targeted at 9- to 13-year-olds to help communication across racial and cultural lines; "Y.E.S., Inc.," a miniseries of 5 half-hour dramas about a community employment center to encourage inner-city minority high school students to become proficient in job and other skills; and "3-2-1-CONTACT," a science series that will be described in more detail later in the section on science education.

Special Groups

The computer has been found useful in schools for various special groups, such as the handicapped, the disadvantaged, and students in rural schools.

According to an education specialist at International Business Machines (IBM) Corporation, the market for computer hardware and software designed for handicapped persons is large. Computers, because of their great adaptability, are useful not only for special education in the schools, but also for helping handicapped students prepare themselves for job entry.

The U.S. Department of Education's National Center for Education Statistics (NCES) reported that students attending schools in the Chapter 1 program (the Federal program for the disadvantaged that is discussed more fully in the next section of this chapter) have about the same access to computers as other students in schools that have not been designated as Chapter 1 schools. About 35 percent of the schools have computers and each student spends about 9.2 hours a year on a computer. The report also stated that about 19 percent of Chapter 1 schools use computers mostly for remedial work, compared with 9 percent of other schools.

A number of small schools, mostly in the Midwest, are experimenting with two-way audio and video television networks that provide televised instruction for hard-to-schedule courses. Although not many schools are yet involved, the experiment has been reported academically successful and is attracting broad interest from around the country. (New York City schools have used television lecture systems for over two decades, but the video was only one-way, so that the teacher could hear but not see the pupils, while they could both see and hear the teacher.)

With a few notable exceptions (such as States like Texas, North Carolina, Virginia, New York, Minnesota, Delaware, and Alaska, that have been deeply involved in high technology education for nearly a decade), much of what is going on in high technology education has been started within the past year or two. It is therefore probable that State and local high technology education programs will, just like the high technology revolution, grow exponentially.

Postsecondary Education

Many elements are also working at the postsecondary level to increase productive use of computer technology, both for teachers and for postsecondary students.

A federally funded project, State Leadership Assistance for Technology in Education (SLATE), aims at inducing States to take a more active role in education technology. Since 1980, about 30 States have passed laws or developed guidelines on computer literacy for teachers, focusing mostly on inservice rather than preservice teacher training. About 14 other States now require or recommend that students develop some familiarity with computers. In most cases, those requirements or recommendations take the form of general guidelines and course goals set by State education departments or boards of education, with specific course content and proficiency tests left up to local school systems.

Some higher education institutions are moving very rapidly in totally integrating the computer into campus life. One university set up terminals throughout the campus that can be used for accessing information about scheduling and grades; to turn in assignments and reports; to study alone, in groups, or with professors; and to communicate socially with other students. Another university is planning to link 10,000 terminals with each other, with a network of research facilities, and with faculty homes. Still other higher education institutions are requiring students to purchase or lease computers to be used during their time at the institution.

There is a growing number of education-business partnerships with a focus on high technology. Corporations are helping to finance new computer programs, providing consulting and teaching assistance, opening their doors to field trips and work study programs, and participating in a range of unique arrangements with higher education institutions as well as with school systems.

Telecourses are also a growing field at the higher education level. An estimated 100,000 tuition-paying students tune into Public Broadcasting System telecourses that offer college-credit instruction on topics ranging from history to computers to money management. The national telecourse student body has grown from about 55,000 in 1981 to 75,000 in 1982, and then to 100,000 in 1983. Of these, about 80 percent are working toward a bachelor's degree.

"The New Literacy: An Introduction to Computers" is an example of a telecourse to be offered for college credit. Produced by the Corporation for Community College Television, this 25-segment telecourse will be telecast by Public Broadcasting stations across the Nation. Tuition will range from nothing to $300, depending upon the university offering the credit. This telecourse is among several that is funded by the Annenberg School of Communications and administered by the Corporation for Public Broadcasting. These two groups are partners in a 15-year, $150-million program to create innovative, college-level courses with an emphasis on new ways of using telecommunications.

Science in the Schools

Electronic technology has expanded the scientist's ability to examine, store, and retrieve his or her observations. Sophisticated analyzers can examine all types of natural phenomena with a greater degree of accuracy than ever before and explore natural events beyond the limitations of human sensory abilitites. And because of our modern storage and recording systems, scientific experiments and knowledge can be shared not only with scientists, but with the population as a whole. The challenge now is for the schools to take advantage of these resources. This is the first generation to have readily available external memory.

Although a 1978 study by the National Science Foundation on the teaching of science in the elementary schools found that the United States has not done well in terms of teachers qualified to teach and curriculums

emphasizing science, and although recent studies of American education consistently point to the improvement needed in science education, nevertheless 1983 data show that the science and mathematics students entering college are better prepared than they were a decade ago, and that the 1983 freshman class was one of the best prepared in history to enter college. Indications are that the U.S. system is currently able to prepare talented students to excel in science and mathematics, but that it is not providing the scientific literacy for all students that is needed in a democratic society. Only 10 percent of U.S. high schools require 1 year of science, and only 100,000 students leave U.S. high schools with a smattering of calculus.

There is evidence that science is taught better in elementary schools than in secondary schools. Even though some teachers have not had sufficient preparation in the science area and there is a severe shortage of science teachers, as stated in other sections of this report, the emergence of some additional forces within society, such as high quality children's museums, have assisted at the elementary level with "hands on" exhibits and other highly practical applications of scientific principles that can be demonstrated and duplicated with a minimum of expense. At the secondary level, many schools have serious problems with their science laboratories. Even the most affluent school districts seem to have a continuing problem with science laboratories in terms of safety and the support resources required to maintain them in an up-to-date manner. This problem is exacerbated by tight budgets. Furthermore, while most secondary schools offer the traditional biology, chemistry, and physics classes, they are not taught as coordinated science programs. It should be noted, however, that there are special science high schools in various parts of the Nation that regularly produce excellent graduates.

Based upon the National Science Foundation study of the perception of science by elementary school children, the U.S. Department of Education, the National Science Foundation, the Corporation for Public Broadcasting, and United Technologies together developed a television series produced by the Children's Television Workshop to provide for 8- to 12-year-old children an awareness of the role of science in our society, the joy of scientific inquiry, and the potential career opportunities in science. The result was the 105-program television series "3-2-1 CONTACT," which was first broadcast in 1980. Extensive teacher and student materials accompany this program, which is viewed by approximately 8 million children each day of the week. More than 750,000 teacher guides have been distributed to schools throughout the Nation. Studies indicate that children not only develop a better awareness of science in society, but also retain factual information concerning the scientific principles in the programs.

Also, as noted earlier in this section, the U.S. Department of Education sponsored a six-part series on minorities in science, "Spaces," which is targeted for junior high and high school children. This program emphasizes the contributions made by black, Hispanic, Asian American, and Native American scientists.

Another series supported by the U.S. Department of Education is designed to provide some basic science teaching to 8- to 12-year-olds. Entitled "The Voyage of the Mimi," the series centers around a marine biology study of humpback whales. Practical applications of science and mathematics are experienced by the crew of the Mimi. For each of the dramatic segments, there is a video field trip that reinforces the scientific facts of the program. The project also includes related microcomputer super software and video discs.

The Department has also supported development of microcomputer programs in mathematics, some of which were to provide resources for gaps discussed by the National Teachers of Mathematics Education in their publication on the agenda for the 80's. These materials are involved with concepts that relate to pre-geometry skills, probability, and estimation.

While there are encouraging signs of a renewed interest in science education, there is great need for materials development and teacher-training activities. To help in these ways, the National Science Foundation (NSF) has offered a $75 million grant for precollege science and mathematics education programs for fiscal year 1984. The NSF has proposed a number of workshops, fellowships, and training programs in recognition of the fact that solutions to the Nation's problems in precollege math and science education require "local initiative, attention and action by all sectors including state and local governments, necessary leadership by the federal government, development of teachers, teaching materials and techniques central to the motivation and learning of students." Also, some school districts have developed science curriculums and a number of publishers are preparing new science materials.

The real need is to develop an integral science education program that includes all grades and encourages and stimulates all students to acquire sufficient scientific knowledge to prepare them for educated participation in the modern world.

EDUCATION FOR SPECIAL GROUPS

The Disadvantaged

Chapter 1 of the Education Consolidation and Improvement Act of 1981 (ECIA), formerly Title I of the Elementary and Secondary Act, is the largest program of Federal financial aid to elementary and secondary school students. The program enables local education agencies (LEA's) to meet the special educational needs of disadvantaged children by providing supplemental instructional and support services. It is a program of grants to the States, which then pass the funds to their LEA's for operating locally designed projects.

Evaluation requirements have been part of the law from its beginning in 1965, but the States were not required to report their findings to the Federal Government in a uniform way until 1979. Beginning with the 1979-80 school year, each State education agency (SEA) has compiled

reports from each of its school districts (or from a one-third sample of its districts) and submitted a statewide education report to the U.S. Department of Education.

Chapter 1, ECIA, was implemented nationwide for the first time in school year 1982-83 and so evaluative data are not yet available. However, evaluative data are available from school year 1981-82, the final year of Title I. In that year, approximately $2.5 billion was distributed to about 14,000 eligible school districts. The States reported serving approximately 4,670,000 public school students during the summer. Grade levels served ranged from pre-kindergarten (less than 1 percent of those served) through 12th grade (about 1 percent of the children served). Sixty-nine percent of the children who received Title I services in that school year were in grades 1 through 6.

The numbers of public school students served by Title I declined roughly 10 percent between 1979 and 1982, which is somewhat greater than the reduction in funds, not including inflation. A similar decline was noted in the number of private school students served. The nature and intensity of services provided to private school participants were generally comparable to those received by public school students.

In school year 1981-82, about 70 percent of all program participants received compensatory instruction in reading, and 42 percent received supplementary mathematics instruction. Other major instructional service areas were language arts (20 percent of the students), limited English and English-as-a-second-language (11 percent), and social studies (22 percent). In addition, support services such as guidance and counseling (21 percent) and health/nutrition (18 percent) were provided. The average Title I student received 4 hours of special program instruction a week, in small classes averaging 9.8 students.

In the same school year, local Title I project funds supported approximately 177,000 full-time-equivalent staff positions (of which 85 percent were teachers or teacher aides) and an additional 18,000 positions during the summer term. Inservice training was provided for almost 275,000 personnel, of which 84 percent were teachers or teacher aides.

State reports for the last 3 years of Title I (1979-80 through 1981-82) indicated that the program was effective. In each of the 3 years, modest reading and mathematics achievement gains were found in nearly all grades. As stated earlier, data are not yet available for the first year of Chapter 1, which was 1982-83.

Migrants

There are about 800,000 migrants in the United States, of whom about 67 percent are located in California, Texas, and Florida. (Migrants are persons who move frequently in order to find work, such as harvesting of crops.) The Federal Government has designed a Migrant Education program to establish and improve programs to meet the special education needs of children of these migratory agricultural workers and fishers.

In each year since 1980, more than $255 million of Federal funds have been allocated to the program. Support comes through the following four programs:

o Grants to State education agencies: These grants are made directly to State education agencies, which directly or through arrangements with their local education agencies, with public or private nonprofit agencies, or with other States, operate migrant education programs. These programs assist State education agencies in identifying migratory children up to 21 years of age and in providing supplementary education and support services for them. In fiscal year 1983, about 565,000 students were served in approximately 2,500 school districts.

o Inter/Intrastate Coordination: The Migrant Student Record Transfer System coordinates activities such as the transfer of health and academic records of migrant children, develops strategies for parent involvement, and develops and implements uniform identification and recruitment materials and procedures. In fiscal year 1983, all States were involved in 13 projects.

o High School Equivalency Program: Payments are made to higher education institutions to provide outreach, teaching, counseling, and placement services to eligible migrant and seasonal farmworker dropouts wishing to obtain a High School Equivalency Certificate; and to assist with their subsequent placement in a college or university, a job-training program, the military, or full-time employment. In fiscal year 1983, 20 projects served about 2,800 students.

o College Assistance Migrant Program: Payments are made to higher education institutions to assist migrant and seasonal farmworkers enrolled as first-year undergraduates in making a successful transition from secondary to postsecondary education. In fiscal year 1983, this program involved five projects serving 500 students.

The most recent national impact study assessed the school achievement level of migrant children in grades 2, 4, and 6, and found that almost one-half to two-thirds scored in the lowest quarter of the population as a whole in reading, and one-fourth to more than one-third in the lowest quarter in mathematics. However, the study also found that these children showed statistically significant gains in reading and mathematics test scores over the years between pretest and posttest, with reading score gains nearly as high as those expected for the population as a whole. Nevertheless, as the migrant children grew older, their absolute achievement appeared to fall farther behind that of the general population.

Persons With Limited Proficiency in the English Language

The task of providing instruction in the English language for persons with limited proficiency in the English language is not new. All levels of government as well as private associations have been supporting instruc-

tion in English-as-a-second-language and bilingual education programs for many years. The Federal Bilingual Education Act has been implemented for 15 years. Recently, however, the number of refugees and immigrants has been increasing, and with it the problem of educating their children. (Education of adult refugees and immigrants is discussed in the following section on adult illiteracy.)

During fiscal year 1983, the Office of Refugee Resettlement (in the U.S. Department of Health and Human Services) recorded a total of 60,622 refugees as entering the United States. Of these, 16,175 were children between the ages of 6 and 17. Approximately 65 percent of the 60,622 refugees were from Southeast Asia, while 21 percent were from Eastern Europe and the Soviet Union. Since 1975, a total of 658,900 Southeast Asian refugees have come into this country, with 244,000 entering California alone. States into which more than 20,000 Southeast Asian refugees have come since 1975 are Texas (53,600), Washington (30,400), Illinois (23,550), Pennsylvania (23,000), New York (22,700), Minnesota (21,000), and Virginia (20,300). Also, approximately 125,000 Cubans entered the United States during the "boatlift" from April to October 1980, and about 40,000 Haitians also arrived, mainly during 1980-81. The majority of these refugees settled in Florida. (Additional data on language-minority populations in the United States were given earlier in this chapter in the section on statistical indications.)

A Transition Program, operating under an interagency agreement between the U.S. Department of Health and Human Services and the U.S. Department of Education, provides funding for the special educational needs of refugee children who are enrolled in public and nonprofit private elementary and secondary schools. Under this State-administered program, funds are allocated through formula grants based on the number of eligible refugee children in the States, with further formula allocation to local education agencies. The formula places greater weight on the number of eligible children who have been in the United States less than 1 year than on those who have been here longer, because the needs of recent arrivals are generally greater. Greater weight is also placed on the number of eligible children enrolled in secondary schools than on those in elementary schools because older children tend to require more language training. The main thrust of this program is in English-language instruction and increasing the possibility of mainstreaming the children into regular classroom settings.

Activities funded under the Transition Program include tests to determine education needs, supplemental education services with emphasis on instruction to improve English-language skills, bilingual education, remedial programs, inservice training for teachers, training for parents, and school counseling and guidance services. From school year 1980-81 through 1983-84, approximately 560,000 refugee children have been served, using about $85 million transferred from the U.S. Department of Health and Human Services.

Bilingual education programs, of course, serve not only recent refugees and immigrants but also other persons--and particularly children--whose language background is other than English. Studies carried out under the Bilingual Education Act, Title VII of the Elementary and Secondary Education Act, as amended, estimated that 28 million people in the United States in 1976 had language backgrounds other than English. Of this group approximately 5.8 million were aged 4 to 18. Furthermore, about two-thirds of language-minority people in the country are native born, with the largest language-minority group (more than one-third) being Spanish. While the language-minority population is found in every State, seven States had more than one million of such persons in 1976.

The number of school-aged children with limited-English proficiency was estimated at 3.6 million in 1978, with three-quarters having been born in the United States or one of its outlying areas. California, New York, and Texas accounted for two-thirds of these children. In 1980 the U.S Bureau of the Census estimated that over 4.5 million children between the ages of 5 and 17 had difficulty speaking English.

The Federal Bilingual Education program is administered by the Department of Education's Office of Bilingual Education and Minority Languages Affairs (OBEMLA). Through the program, school districts voluntarily seek and receive aid, for limited periods of time, to design and implement programs of bilingual education. The basic intent of the grants is to serve as a catalyst for local school districts to build the necessary resources and capabilities to operate programs when Federal funding ceases. The legislation also supports national and regional activities to build broad national capacity in areas such as teacher training, curriculum materials development, demonstration and diffusion of exemplary bilingual education practices, and research and information gathering. Funding since 1980 has ranged from about $164 million to about $140 million per year for this program.

Since spring 1980, OBEMLA has also been responsible for operating bilingual vocational training programs for out-of-school youth and adults under the Vocational Education Act, as well as for operating the Transition Program (described earlier in this section) to meet the special needs of refugee children. Funding since 1980 has been in the area of $4 million per year for the bilingual vocational training.

During fiscal year 1983, OBEMLA funded approximately 250 new and 305 continuing bilingual education basic projects. Sixty-five of the new projects were at local education agencies that had never been served. It is estimated that projects funded in that year served approximately 200,000 limited-English-proficient students representing 92 different language groups in elementary and secondary classrooms. Other special accomplishments included funding three management-oriented research studies to investigate the language needs of Pacific Islanders and Native Americans and research studies to determine the need for bilingual education, improve services to students, and improve Title VII (bilingual education) program management.

Overall Administration goals for the immediate future include (1) streamlining the efficiency of Title VII program activities to assure the best use of resources, (2) broadening the range of instructional approaches eligible for funding under Title VII so that local districts have greater latitude in matching instructional programs to the special needs and characteristics of the specific students they intend to serve; and (3) expanding the information base about bilingual education and the needs of limited-English-proficient persons to help guide future policy deliberations on bilingual education. Specific activities to implement these goals are embodied in the President's fiscal year 1983 budget request for Title VII, in proposed legislative amendments to Title VII, and in the ongoing Title VII Part C research agenda.

Functionally Illiterate Adults

While there is no authoritative definition of functional illiteracy, it is often defined as the lack of the knowledge and skills that enable an individual to function in his or her environment--at home, in the community, and in the workplace. Functional literacy must here be clearly distinguished from the literacy that is only the ability to read and write that is claimed by a person being interviewed by a census taker. When this kind of literacy is meant, the United States, like many other developed countries, has had a literacy rate of at least 99 percent for many years. However, it has been estimated from a 1974 study that perhaps as many as 23 million persons in the United States are functionally illiterate in the English language.

Despite the lack of recent data, it is clear that the problem of illiteracy is a large one. To help solve it, President Reagan announced an Adult Literacy Initiative in September 1983, and it has become a priority in the Department of Education. Numerous actions have been taken by the public and private sectors, in cooperation with already existing organizations that have been struggling to combat illiteracy for many years. Initiatives include the following:

o A National Adult Literacy Conference was held in January 1984 to gather together the various forces working on literacy and to map a strategy.

o A video teleconference was beamed to all 50 States at the end of February 1984 that included highlights from the National Adult Literacy Conference, presentations of several different exemplary adult literacy programs, and opportunities for telephone interaction with a panel of literacy professionals. Teleconference arrangements in each State were coordinated by relevant officials in each State. The purpose was to bring together, on a State-by-State basis, people interested in improving adult literacy for information sharing and collaborative planning.

o McGraw-Hill, Inc., a publishing firm, has provided start-up funds of $1 million to establish the Business Council for Effective Literacy, Inc. This council will provide research and technical assistance to companies and will help coordinate privately sponsored literacy programs. Its aim is to serve as a catalyst in the field.

o A group of 11 national organizations, called the Coalition of Literacy, has been brought together by the American Library Association. The coalition has launched a 3-year National Awareness Campaign. B. Dalton, Bookseller, a member of the coalition, is providing $3 million in grants over the next 4 years to reduce functional illiteracy. The firm is working with hundreds of community-based literacy programs, many of which are libraries, in the areas served by its more than 700 bookstores throughout the country.

o The U.S. Department of Education's National Institute of Education (NIE) has awarded $862,000 to the Far West Laboratory of San Francisco and the Network, Inc., of Andover, Mass., to focus public attention on the problem of adult illiteracy and to identify and test model literacy efforts. NIE will also conduct short-term research and technical assistance projects and start a broad data collection effort.

o The U.S. Department of Education launched in November 1983 a special volunteer project that uses funds from the College Work-Study program to develop pilot programs in colleges and universities. With a grant of $20,000 in addition to an institution's annual work-study funds, the college or university will select and train students as tutors and employ them to help adults gain the reading, writing, and computing skills necessary for everyday life. In about a year, the Department will evaluate the pilot programs to see which might serve as models to help other higher education institutions join the fight against illiteracy. As of November 1983, 18 institutions were participating in the project.

The Handicapped

The Education of the Handicapped Act, as amended, provides that all handicapped children must receive "a free and appropriate public education." (Chapter 1 of part II discussed recent amendments to this act.)

Numbers of Handicapped Children Receiving Services

The number of handicapped children receiving special education and related services continues to rise. The 1982-83 total of 4,298,327 served is an increase of 65,045 over the previous school year and of 120,382 over 1980-81. The number of handicapped children served in proportion to total enrollment from preschool through grade 12 rose from 10.08 percent in 1980-81 to 10.76 percent in 1982-83. The increase in the number of handicapped children receiving services is even more significant, however, since the Nation's total school-age population has been steadily decreasing in the past decade. The following summarizes the percentage changes in the number of handicapped children served in 1980-81 and 1982-83 in the 50 States and the District of Columbia:

	1980-81		1982-83	
	Number	% Served*	Number	% Served*
Learning disabled	1,468,047	3.56	1,745,871	4.40
Speech impaired	1,170,538	2.84	1,134,197	2.86
Mentally retarded	844,321	2.02	780,831	1.92
Emotionally disturbed	348,965	0.84	353,431	0.89
Other health impaired	98,656	0.24	52,026	0.13
Multihandicapped	70,460	0.17	65,479	0.16
Hard of hearing & deaf	81,376	0.19	75,337	0.18
Orthopedically impaired	59,664	0.14	57,506	0.14
Visually handicapped	33,005	0.08	31,096	0.07
Deaf-blind	2,913	0.01	2,553	0.01

*Out of total school enrollment.

Substantial variations exist in the number of children served with different handicapping conditions. Large increases in the number of learning disabled (LD) children served overshadow the decreases in the number of children served in most other categories. Since 1976-77 the identified learning disabled population has grown by 119 percent. Reasons for this rapid growth in the number of children served as learning-disabled include improved assessment procedures, liberal eligibility criteria, social acceptance/preference for the learning-disabled classification, and a lack of general education alternatives for children who experience problems in regular classes.

Many States have expressed concern about the dramatic increase in the numbers of learning-disabled children and have taken steps to assure that children are not classified erroneously. These efforts appear to be having some effect. Although the learning-disabled population increased between 1981-82 and 1982-83, it increased at a considerably slower rate than in previous years. The increase from 1979-80 to 1980-81 was 15 percent; from 1980-81 to 1981-82 it was 11 percent. The increase of 118,527 children between 1981-82 and 1982-83 reflects a growth rate of 7 percent, but the growth rate is expected to drop during 1983-84.

The number of seriously emotionally disturbed (ED) children has also increased, possibly as a result of the increased capacity of State education agencies (SEA's) and local education agencies (LEA's) to provide services, especially at the local level. This increase is viewed positively since the number of ED children served has been below expected levels.

Other than LD and ED children, the total number of children served has declined in each of the handicapping conditions, although this is not uniformly true within the States. While the total number of speech-impaired children has declined since 1980-81, there has actually been a slight increase in the percentage of school enrollment served as speech impaired. Clearly, some of the decrease in children with particular handicapping conditions is due to the declining number of children of school age. Some decreases in the number of handicapped can be attributed to definitional and procedural changes in reporting, especially in a few populous States. However, trend data from national totals are often at odds with the data from individual States. Therefore, many factors, such as population shifts and procedural or definitional changes, must be examined to account for changes in the number of handicapped children served.

Children Through Age 5

The implementation of Part B of the Education of the Handicapped Act, as amended, has brought concomitant increases in the nature and extent of programs to provide education and related services to the population of young handicapped children. Early intervention with handicapped children results in a significant decrease in services required later; in some cases, it eliminates or reduces the services otherwise needed when the child enters school, thereby resulting in notable cost savings.

States continue to report increases in the number of preschool-age handicapped children served, especially those aged 3 through 5. Although the increase in the overall number of children reported as handicapped by SEA's was 1.5 percent in the past year, the percentage increase was considerably greater among children aged 3 through 5. The number of children reported in this age group grew from 227,612 to 242,113, an increase of 6.4 percent. This growth represents almost one-quarter of the total increase in the number of persons aged 3 through 21 receiving special education services last year. Since 1976-77, the increase in preschool children served has been more than 23 percent. Despite this progress, there are many preschool handicapped children to whom services are unavailable. The number of preschool handicapped receiving services should continue to grow as States develop model programs to identify and serve them.

Thirty-eight States now mandate services to at least some portion of the preschool handicapped population from birth through age 5. The specific ages and areas of handicap for which services are available vary among States; however, a larger percentage of the 3- through 5-year-old population is reported to be served in those States that mandate services than in those that do not.

Four Federal initiatives--EHA-Part B, the Preschool Incentive Grant Program, the State Implementation Grant Program, and the Handicapped Children's Early Education Program (HCEEP)--have played a critical role in encouraging preschool programs. The number of States choosing to participate in these preschool programs has more than doubled since fiscal year

1978. A recent national analysis of the impact of demonstration and outreach found the accomplishments of the HCEEP projects to be "greater and more varied than those of any other documented education program identified."

There is still room for improvement, however. The critical need now is to expand services for children from birth through age 2. Only five States now mandate services for this age group. Federal efforts in this area will focus on educating professionals and communities about the value of early intervention to assure that each handicapped child receives services.

Secondary Age Students

School districts have expanded the range of program options available to secondary age students. LEA's recognize that a new range of secondary-level alternatives is needed to help prepare students for life after high school. The new or expanded programs are vocationally oriented and seek to provide secondary age handicapped students with specific work-related skills. Two trends can be observed: (1) School districts are hiring vocational specialists and using noneducators from the local business community to teach vocational skills to handicapped students; and (2) many school districts are expanding vocational assessment services, and some are starting vocational and prevocational programs in earlier grades. These expanded vocational programs at the secondary level give handicapped students--in some cases even those who are severely handicapped--the opportunity to receive vocational services in classes with nonhandicapped students.

In a recent survey by the Center for the Study of Social Policy (1983), 65 percent of LEA's said they used EHA-Part B funds to develop collaborative arrangements with vocational education programs and vocational rehabilitation programs to serve secondary age handicapped youth. LEA's are beginning to realize that secondary age programing, in contrast to many other areas of special education, does not necessarily entail significant new costs. Thus, in a time of shrinking State and local budgets, SEA's and LEA's may be able to start or expand secondary programs without substantial new expenditures. By leveraging resources from other agencies (such as the Department of Vocational Rehabilitation and/or the Division of Vocational Education), States or districts can expand their vocational programs with only moderate new investments.

Despite some progress, programing for secondary age handicapped students leaves much to be done. Program changes as described here need to be expanded so they become the rule rather than the exception. The U.S. Education Department plans to give highest priority to improving programs and services that will help handicapped individuals make a successful transition from school to community.

The U.S. Education Department plans to assist the expansion and improvement of transitional services for handicapped children and youth through development of curriculum materials, research on the accessibility

of employment training, followup studies of secondary age students, demonstration and dissemination of successful practices, communication between the education community and the business community, and development of workable interagency agreements.

Data from all 50 States and the District of Columbia show that the number of handicapped students aged 18 through 21 has grown steadily. The number of 18- through 21-year-old handicapped youth rose from 159,399 to 173,642 between 1981-82 and 1982-83, an increase of 9 percent. This increase is particularly impressive because the population 18 through 21 decreased by about 200,000 during this period. Since 1980-81, this age group has increased by 24 percent. These increases again stand in contrast to the relatively stable changes for the total school-age handicapped population.

In 1983, 24 States had mandates to serve handicapped youth through the age of 21 if these youth had not graduated from high school. About one-third of the 26 States that do not mandate services to youth through age 21 permit local school systems to offer services at least through age 21.

The Gifted and Talented

Although efforts to provide an appropriate education for gifted and talented students have been going on for some time, only recently has education for these children become a nationwide concern. The need to provide a challenging education that will develop to the full the abilities of bright students is being seen as vital to the future of the country. Increasingly, a growing constituency of educators, parents, and business leaders is striving to ensure that the gifted receive such an education.

Most States estimate the incidence of gifted and talented students at between 3 and 5 percent, with several as high as 10 percent. Those actually served range from 2 to 100 percent, with an average of 50 percent receiving service. Although aptitude and intelligence testing remains the primary method of identifying gifted and talented students, a recent movement is expanding the definition of the gifted to include youngsters who are creatively although perhaps not academically gifted. To identify these children, teachers must examine drawings and poems and observe behaviour.

In 1980, the Federal Government appropriated $6.28 million and the 50 States increased the funding to $117 million to reach an estimated 35 percent of gifted and talented students. Federal funds now are channeled through the Chapter 2 block grant program to the States and then to local gifted and talented programs. No data are available at this writing on the amount of Federal funding for these programs. However, according to an article in U.S. News and World Report (Aug. 8, 1983), States are spending over $160 million a year, more than triple their annual outlays in the midseventies, thus increasing the number served from about 384,000 in 1976 to more than 1 million.

The same article contained information on the Johns Hopkins University gifted and talented summer program. The university has been heavily involved in the identification of gifted and talented students and has run a talent search each year, in which grade 7 students scoring 500 or above in the College Board Scholastic Aptitude Test are eligible for the school's special summer programs. Students from 9 to 16 years of age cover the equivalent of 1 month of high school work in one subject every day for 3 weeks. Resident enrollment at the John Hopkins summer camp program jumped from 109 in 1980 to well over 1,000 students in 1983. Another summer program of note is run by the North Carolina Governor's School, where high school juniors and seniors concentrate on one academic or artistic disipline and also consider ethical questions.

Business leaders, realizing that educating gifted and talented young people to their full potential is important to the country's technological and economic growth, have taken initiatives in this field. One team of businessmen has established a National Business Consortium for the Gifted and Talented, with a chairman in each of the 50 States and school districts. The goal is to make surveys on the status of education for the gifted and talented in each district and to make one businessman in every community in America an advocate for education of the gifted. An example of another business-initiated program is found in Cleveland, where 20 business and professional people serve as mentors to gifted juniors, thus exposing them to a career and a role model.

A 50-State survey of the status of programs for the gifted and talented is expected to be completed this summer by the Council of State Directors of Programs for the Gifted. This survey will show in recent data the great strides that have been made in this country since the midseventies. Also, some States have been moving from categorical funding to formula funding for gifted and talented programs, a trend that, if it continues, will further increase support for these programs.

4. EDUCATION RESEARCH

The progress of education research and development in the United States does not readily lend itself to summary because of the decentralized, fragmented nature of the enterprise, the lack of agreement and clarity in indicators of progress, the inadequacy of systematic means of assessment, the very large number of research projects throughout the country, and the many different groups involved in research.

Research in the United States is sponsored by several Federal departments, other government entities, private foundations, school and university systems, industry, and professional associations. It is conducted by thousands of individual investigators located in the 30 to 50 principal research universities, the 500 or so nonpublic education research organizations, most of the 50 State departments of education, and many of the local education agencies. And finally, research is used to varying degrees by a myriad of agents in the schools themselves, by State education officials and policymakers, by national policymakers and associations, and by the members of the research community itself.

The Federal Government continues to provide the greatest portion of funds for education research and development in this country. The major agency for this is the U.S. Department of Education. Creation of the first national-level Department of Education in 1980 gave rise to some changes in the organization and structure of Federal education research support activities. The Department of Education Act stated that one of the primary purposes of the new Department of Education was "to promote improvements in the quality and usefulness of education through federally supported research, evaluation, and sharing of information." To this end, the Congress created the Office of Educational Research and Improvement (OERI), with its Assistant Secretary responsible for supervising education research and statistical activities and disseminating research-based information for policymakers, teachers, school administrators, and others.

Within OERI, the National Institute of Education (NIE) is the principal agency supporting and conducting education research. The Fund for the Improvement of Postsecondary Education (FIPSE), as well as offices formerly in the Office of Education concerned with bilingual education, education for the handicapped, vocational education, and international education, also fund research activities. This report will confine itself, however, to the research supported by NIE and FIPSE. Both NIE and FIPSE administer competitive grants programs, but the former focuses more on basic and applied research, mainly in the precollege years, while the latter supports action projects, mainly beyond high school.

THE NATIONAL INSTITUTE OF EDUCATION

The National Institute of Education (NIE) was established by the Congress in 1972 to help improve education through research and development (R&D). While the direction of education remains primarily the responsibility of State and local governments, NIE is responsible for providing leadership in the conduct and support of scientific inquiry into the educational process. For this purpose, during the period of this report it was divided into three broad program areas: Teaching and learning, dissemination and improvement of practice, and educational policy and organization. NIE spent approximately $110 million during the 3 years covered by this report for R&D in education.

Accomplishments and trends in various research areas pursued by NIE are summarized below. Although these areas in no way represent the whole range of education R&D, and while the character of NIE-supported work is not always typical of the overall field of work in any area, these topics capture the most important lines of work nationally. The limited nature of this report unfortunately allows touching on only a few of NIE's many activities.

Reading

NIE's reading research program over the last few years has emphasized comprehension. Instruction based on the new research treats reading (and writing) as purposeful human communication, not as collections of subskills. There is evidence that instruction based on this research can, in fact, improve comprehension. Several school districts have carefully revised instructional programs in light of recent comprehension research. Directed research will continue to focus on the application of basic research findings to curriculum and instruction, while characteristics of especially effective advanced reading comprehension programs will be further studied for their implications for school management and substantive practices.

Writing

The NIE research program on writing responds to several reports within the last 5 years that point to the need for fluent writing in classrooms. There is currently a movement in this country to incorporate more writing into the classroom through activities that require extended writing, recognize the importance of audience and purpose, and understand that good writing evolves through a series of drafts rather than emerging in perfect form on a first try. Future basic research on writing will attempt to assist this movement by studying writing processes and their development, the structure of written products, and effective teaching of writing processes at a variety of age levels.

Language Learning

Since 1978, NIE has funded systematic research on second-language learning, bilingualism, foreign language instruction, and bilingual education. This research is providing information to school district personnel, policymakers, State administrators, and researchers to help them make informed decisions about providing services to limited-English speakers, fluent bilinguals, and English speakers who wish to acquire a second language. Research has focused on issues dealing with the process, rate, and sequences of language development and second-language learning. NIE research on language assessment is being used by school districts to develop entry/exit criteria to identify the neediest students and students ready to exit from bilingual and other language service programs, as well as to evaluate students in foreign language programs. (Some of this research was funded through the Elementary and Secondary Education Act, Title VII, Part C, as well.) Future research will continue to look at second-language issues and language and literacy in general.

Adult and Youth Literacy

NIE research on adult and youth literacy, underway since 1981, has focused on the many adults and youth who function at a low-literacy level (discussed in part II, chapter 3). It has addressed three important dimensions of educational solutions to the problem: The kinds and levels of literacy needed for functional literacy and employment, the educational approaches already developed, and the factors that induce or inhibit the acquisition of needed literacy skills. Research in this area for the next few years will continue to revolve around the central issue of language and education.

Basic Cognitive Skills

As part of a long-term program on cognitive skills and education, NIE researchers have been looking at differences in thinking processes among students who score high and low on intelligence tests, and at the related possibility of increasing intelligence. Other projects funded jointly with the National Science Foundation have produced major advances in the understanding of how science learning occurs. Work supported by NIE is also offering new insights into the nature of successful thinking in the social sciences.

Mathematics Studies

The NIE program of mathematics studies addresses both theoretical questions about the nature of mathematical concepts and how they develop and practical ways of improving math instruction. Studies examine the following four areas: The nature of mathematical skills and concepts and how they develop in children and adults, the skills and knowledge that are needed to perform mathematical tasks in and out of school, the effects of cultural or economic background on people's choices to study math in high school and college, and the improvement of teaching practices and curricular materials in mathematics.

Instruction

A national conference held by NIE in winter 1982 reviewed 8 years of research on teaching to determine its importance for improving instructional practice. The proceedings indicated that significant progress has been made in the understanding of effective schools and teaching, primarily reading and math instruction at the elementary school level, and that much of this research has already been used to improve instructional practice by teachers, teacher trainers, and local school districts throughout the United States and also in other countries. It was felt that these issues now must be examined at the secondaryschool level with other subjects such as writing and science, and with other instructional methods such as the use of technology.

Staff Development

NIE staff development research is designed to provide information on the conditions of teaching and teachers, rewards and incentive systems within schools, organizing schools to promote improved teacher performance, and teacher selection, evaluation, and training. This information is directed toward teacher-education institutions as well as State and local policymakers and practitioners who are responsible for developing policy and practice to improve teaching quality.

Science and Math Education

NIE's program of research on teacher shortages in math and science is designed to determine and report on the state of the problem, its related issues, and solutions; to conduct a national conference on the science and mathematics teacher shortage; and to prepare a research agenda on methods of alleviating the shortage. The second of these tasks was completed in February 1983 when NIE sponsored a national conference designed to identify the salient elements of the shortage, add corollary data to the existing body of knowledge, and influence and guide future NIE research in the area. There was some agreement that attention should be given to curriculum reform, process research on classroom learning and instruction, and increasing public support for classroom teachers.

Testing

In 1982, NIE's research program on testing produced a national survey of test use conducted by the Center for the Study of Evaluation. Additional research has focused more directly on improving testing practices in State and local testing programs, new methods to assess students' skills, new theories of test design, and application of new computer technologies to testing problems.

Evaluation

The evaluation program has focused primarily on the development and application of evaluation methods for use by school districts in analyzing and improving their education programs. Using a "stakeholder" philosophy, in which the evaluation is planned and conducted in concert with continuous review of its clients, or "stakeholders," the program has demonstrated that evaluations can be dynamic, understandable, and useful.

Also, research to understand how better to estimate the effects of changes in social programs and of the reduction of programs has been used both domestically and internationally over the past 4 years by the U.S. Agency for International Development, UNESCO's Division of Social Sciences and Applications, and the U.S. General Accounting Office. The prolific output from research in this area has continued most recently with publication in 1981 of Reanalyzing Program Evaluations.

Assessment

Each year since 1969, the National Assessment of Educational Progress (NAEP) has gathered information about levels of education achievement across the country. NAEP surveys the education attainments of 9-year-olds, 13-year-olds, 17-year-olds, and young adults (ages 26-35) in 10 learning areas: Art, career and occupational development, citizenship, literature, math, music, reading, science, social studies, and writing. Different learning areas are assessed every year, and all areas are periodically reassessed in order to measure changes in education achievement. During 1981, NAEP produced tapes for all three reading assessments and revised versions of the existing tapes for citizenship/social studies, mathematics, and science. A total of 142 tapes were distributed to 29 universities and research centers in 17 States, as well as 1 foreign university. NAEP will expand its efforts to provide information that is both timely and relevant to local educators and policymakers.

Research on Dissemination

The purpose of the dissemination research is to facilitate the transition between research and practice by identifying ways of making research knowledge more useful and accessible to educators. NIE's major recent activity in this area has been a study to examine the sources and uses of policy information by key participants in the formation of State education policy. A consortium of State boards of education, superintendents, legislatures, and Governors is identifying those education issues that State policymakers consider of greatest current and continuing importance and determining how research information might be helpful in formulating State policy regarding those issues. With this work, NIE will study how effective, lasting dissemination channels can be established.

Knowledge-Based Technical Assistance

NIE has carried out an integrated set of activities designed to strengthen the interest and capabilities of selected education organizations and groups of practitioners to conduct effective dissemination and knowledge-use activities. These include the State Capacity Building Program to strengthen the dissemination programs of 44 States and the Urban Superintendents Network for 22 major urban schools districts. NIE's system of regional research and development laboratories also provide research knowledge and services to meet the special needs of their respective regions of the country, and a series of documents has been produced that synthesizes and interprets research knowledge.

ERIC

The Educational Resources Information Center (ERIC), the major element in NIE's information support services, is a national information system that provides access to descriptions of exemplary programs, research and development findings, and related information for use in developing more computerized data storage and retrieval systems in which 16 clearinghouses, covering a wide variety of disciplines and subject areas, make available almost half a million documents.

School Management and Organization

Studies have sought to develop knowledge and techniques for organizing and managing effective schools. These have included projects on principalship and junior high schools as well as basic research on how districts are coping with decline, the role of citizens as third parties in collective bargaining, and time-and-motion studies of education administrators.

Rural Education

A program of research in rural education was established to identify the needs of rural areas and expand the data base necessary to analyze education in rural locations, analyze the effects of public policies on rural schools and districts, and support efforts to improve practices in rural schools.

Postsecondary Studies

Basic studies in postsecondary education support research designed to provide the foundations for improved management of postsecondary education institutions. They have included two projects relating to the Nation's historically black colleges and universities and a 3-year study of the effectiveness of various school desegregation strategies.

Teaching Policy Studies

Research was conducted on the effectiveness of teachers to implement the many Federal and State policies (such as equity and civil rights mandates) and the current condition of teaching as affected by the multiple external mandates.

Desegregation Studies

Research included a 3-year study of the effectiveness of various school desegregation strategies.

Studies on Law and Government in Education

Research addressed issues of education law, policy, and politics, particularly from the perspective of public administration and the operation of the intergovernmental system in education. In collaboration with the congressionally mandated School Finance Study, NIE developed a series of reports and seminars on such issues as the match between Federal goals and strategies, the Federal experience with program collaboration, and the feasibility of differential treatment of States.

Vocational Education Study

NIE submitted the final report of the Vocational Education Study to the Congress. This was a study of State and federally funded vocational education programs to contribute findings of fact, policy-relevant analyses, judgments, and insights useful for reauthorization of the Vocational Education Act.

Education Finance

NIE studies include issues related to the production, allocation, and expenditure of education resources and the influence of social, economic, and demographic trends on education finance. A set of studies also explored the economics of education beyond high school and the consequences of a shifting mix and number of postsecondary students.

Educational Technology

An Educational Technology Center at Harvard University has been established to provide a focus for educational technology research activities. The nine subject-matter research centers and seven regional laboratories funded by NIE are also involved in many educational technology activities.

THE FUND FOR THE IMPROVEMENT
OF POSTSECONDARY EDUCATION

The Fund for the Improvement of Postsecondary Education (FIPSE) represents one type of Federal strategy to "encourage reform, innovation, and improvement" in postsecondary education, including not only traditional higher education programs but also career and professional training, the technology of communications, and graduate education. It does this by encouraging innovative responses to the learning needs of postsecondary students. The Fund's principal approach to improving postsecondary policy and practices is to attract and fund projects designed and carried out by educational practitioners that show promise of achieving "learner-centered" change locally, while also attracting a broad audience.

The priorities of the Fund reflect current higher education concerns in the country, because it develops an agenda every few years by reviewing previously submitted proposals and considering suggestions from educators and national commission reports. This agenda for improvement then becomes the basis for new competitions conducted by the Fund. Over the years the agenda's change reflects the progress of higher education in the country.

Over the past decade the agenda focused on nontraditional students--women, minorities, adults, the handicapped, and the elderly--but the current agenda no longer emphasizes opportunities for these students as strongly, reflecting the fact that the Federal Government has been successful in assuring access to postsecondary education for all its citizens so that nontraditional students have become a permanent and sizable part of postsecondary education. Student populations have changed greatly, so that full-time, residential students are now a minority, women make up a majority of students (although usually on a part-time basis), and minority groups have increased their participation.

As conditions have changed, so have strategies for improvement, although no single focus has emerged. A publication by the American Association for Higher Education in 1984 surveyed the accomplishments of the Fund during its first 10 years, from 1972 to 1982. It reported that during this time the Fund awarded $111.47 million for 1,040 grants that resulted from 22,000 applications. According to an external evaluation of the Fund, at least 70 percent of the projects started with FIPSE's seed money continued after the funding ended. Funding for 1983 was $11.7 million.

During the early 1980's (the years covered by this report to the International Bureau of Education--the IBE), the emphasis had not yet clearly changed. Projects were still being funded on the basis of those priorities mentioned in the last U.S. report to the IBE. From fiscal years 1980 through 1983, the Fund emphasized: (1) Quality programs for all postsecondary students, such as projects that supported assessment of the quality of programs added by institutions for minority groups and women and the integration of such programs into institutions' curriculums

and operating budgets; (2) graduate and professional education and employment for women and minorities, such as projects that increased access, recruited promising minority undergraduates for careers in teaching and research at the higher education level, or established major graduate projects for workers already employed but lacking in credentials; (3) work and learning, such as projects that prepared individuals to cope with changes in the economy, shifting job markets, and technological advances, or drew institutions into new partnerships to solve complex work and learning problems; (4) active modes of learning, such as projects that attempted to give learners a larger role in designing their education experience or tried out new and active modes of learning; (5) focus on knowledge and abilities, such as projects that designed new instruction, approaches derived from coherent and provocative theories of intellectual development or that developed computer-assisted instruction programs to help students grasp underlying concepts and programs that merge academic and experiential learning; and (6) resources and incentives for post-secondary education, such as projects that devised ways of stretching an institution's budget, developed methods whereby institutions can share the costs of hiring new staff and projects, or designed evaluation programs that stimulated education improvements.

The areas currently identified as new priorities in postsecondary education, and for which proposals addressing such priorities will be sought by the Fund are: (1) Important and difficult learning, such as proposals that will strengthen or alter teaching practices or content to ensure mastery of important and difficult ideas; (2) access and completion, such as proposals that will develop education practices that will help learners whose educational progress has been impeded by economic circumstance, ethnic background, or distance to complete postsecondary education programs; (3) uses and implications of the new technologies, such as proposals that will help institutions to use technology appropriately and effectively in education, as opposed to administrative uses; (4) graduate and professional education, such as proposals that will help higher education institutions to adequately prepare graduate students for careers outside the academic world; (5) teacher education and cooperation between colleges and schools, such as proposals that will explore ways of improving certification practices or stimulate teacher leadership qualities; and (6) organizational capacity to improve education, such as proposals that will devise new financial aid mechanisms or proposals from any kind or combination of organizations that will improve the capacity of faculty, departments, colleges, and systems to formulate and carry out their own unique agendas for improving education.

Part III
Selected References

Profile of Reports

TITLE	ACADEMIC PREPARATION FOR COLLEGE: What Students Need to Know and Be Able to Do	ACTION FOR EXCELLENCE: A Comprehensive Plan to Improve Our Nation's Schools	AMERICA'S COMPETITIVE CHALLENGE: The Need for a National Response	HIGH SCHOOL: A Report on Secondary Education in America	MAKING THE GRADE	A NATION AT RISK: The Imperative for Educational Reform	THE PAIDEIA PROPOSAL: An Educational Manifesto	A PLACE CALLED SCHOOL: Prospects for the Future	A STUDY OF HIGH SCHOOLS
Sponsor/ Author	Education EQuality Project—The College Board	Task Force on Education for Economic Growth Education Commission of the States	Business-Higher Education Forum	Ernest L. Boyer The Carnegie Foundation for the Advancement of Teaching	Twentieth Century Fund Task Force on Federal Elementary and Secondary Education Policy	The National Commission on Excellence in Education-US Department of Education	Mortimer J. Adler on behalf of the Paideia Group	John I. Goodlad	National Association of Secondary School Principals and the Commission of Education Issues of the National Association of Independent Schools
Chair(s)	Not Identified	Governor James Hunt, Jr.	R. Anderson David S. Saxon	Ernest L. Boyer	Robert Wood	David P. Gardner	Mortimer J. Adler	Ralph W. Tyler	Theodore R. Sizer
Representation of Task Force Members	200 high school and college teachers as members of various College Board committees and council	41 members: governors, legislators, CEO's, state and local school boards, and labor	16 members: business and higher education	28 members: state and local level educators, higher education, and business	11 members: state departments, local school level, and higher education	18 members: governor, legislators, State Boards, local school level, higher education, and professional associations	22 members: National, state and local level educators	6 members: National, state and local level educators	Study team of educators and educational researchers
Data Bases Utilized	Data collected from 1400 people through questionnaires and meetings; also judgments and recommendations	Task Force consensus on problems and recommendations	Past surveys and contemporary expertise	Field studies of 15 public high schools, data from **High School and Beyond** (NCES) and **A Study of Schooling** (Goodlad)	Background paper by Paul E. Peterson utilizing existing data	Commissioned papers; public oral and written comment; existing analyses, and descriptions of notable programs	Primarily philosophical	Questionnaires and observations in 38 schools across the country	Field studies of 14 public and private high schools
Time Frame of Study	3 years	1 year	1 year	3 years	1.5 years	1.5 years	1 year	8 years	3 years
Date of Release	May 1983	May 1983	April 1983	September 1983	May 1983	April 1983	September 1982	September 1983	January 1984

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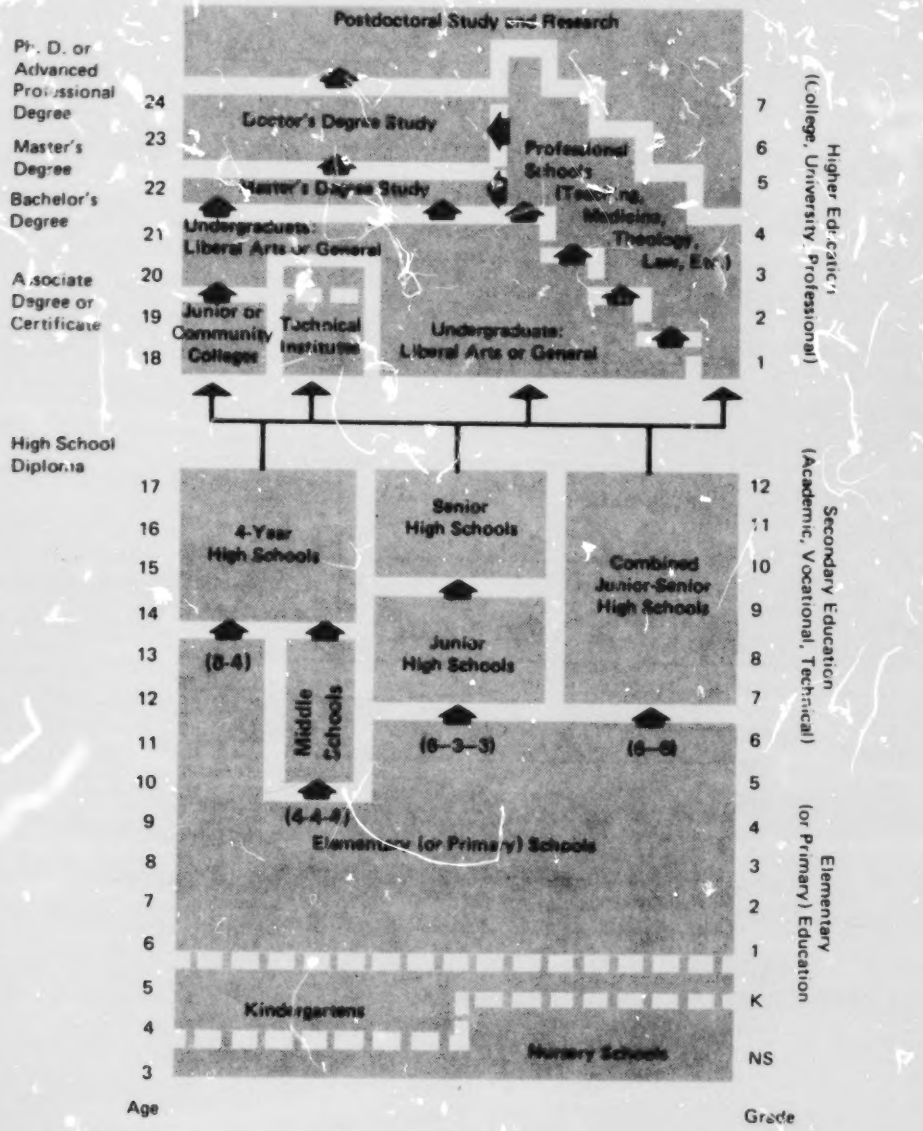
Figures

Figure 1.- The structure of education in the United States



NOTE.--Adult education programs, while not separately delineated above, may provide instruction at the elementary, secondary, or higher education level.

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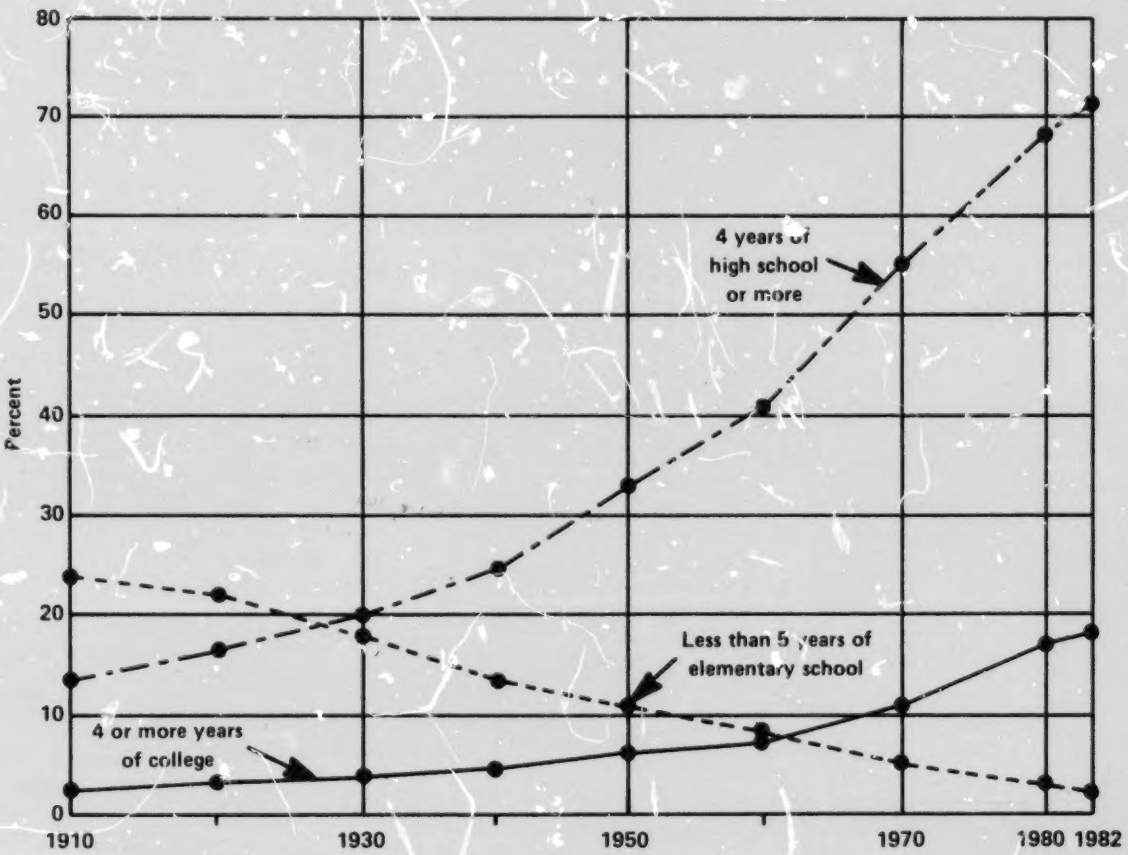
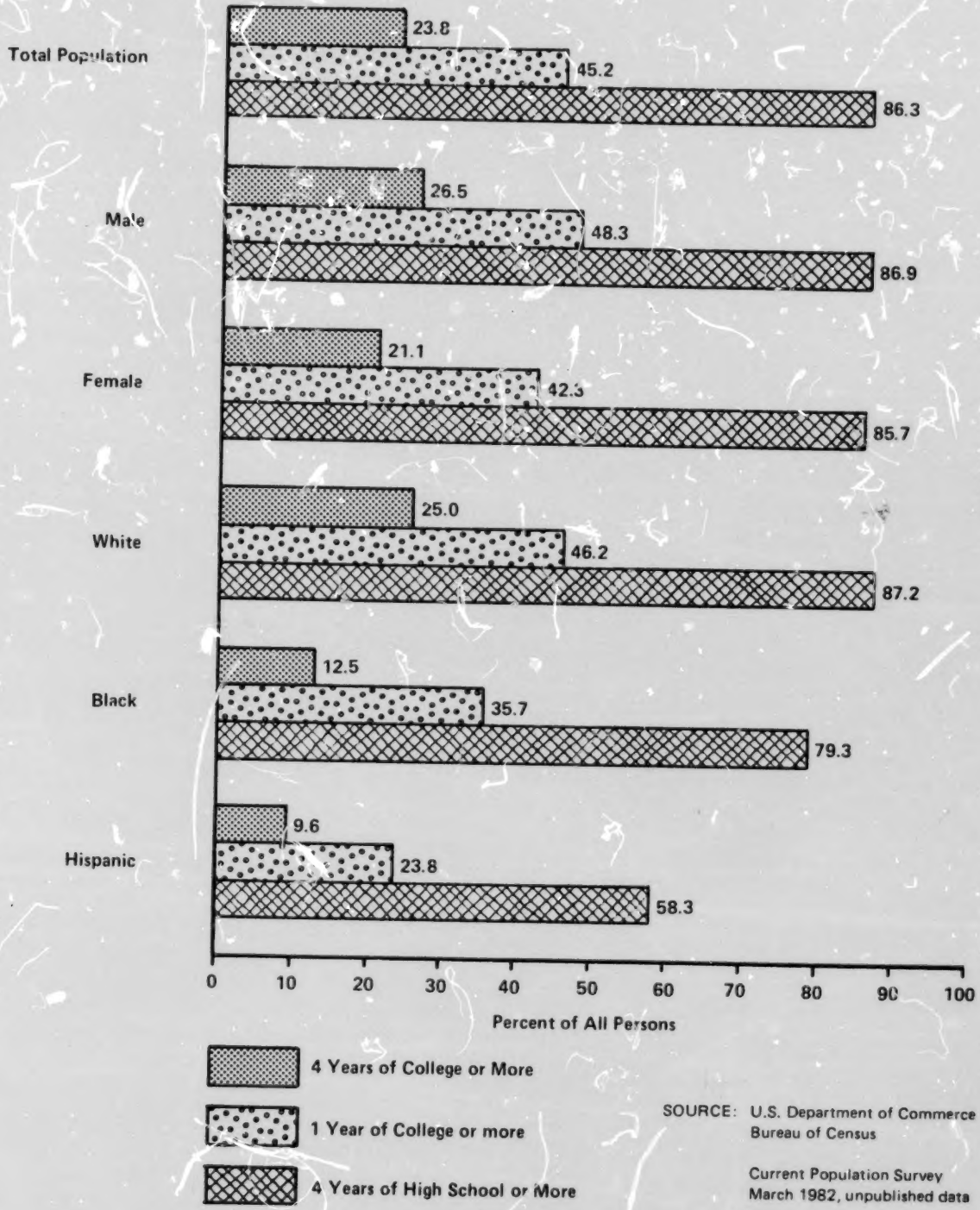
Figure 2.—Level of school completed by persons 25 years old and over: United States, 1910 to 1982



NOTE:—Data prior to 1940 are estimates based on retrojection of 1940 census data on education by age. Prior to 1950, data exclude Alaska and Hawaii.

SOURCES:—U.S. Department of Commerce, Bureau of the Census, *1960 Census of Population*, Vol. 1, Part 1; *Current Population Reports*, Series P-20, Series P-19, No. 4, P-20, No. 374 and 1960 Census Monograph, *Education of the American Population*, by John K. Folger and Charles B. Nam and unpublished data.

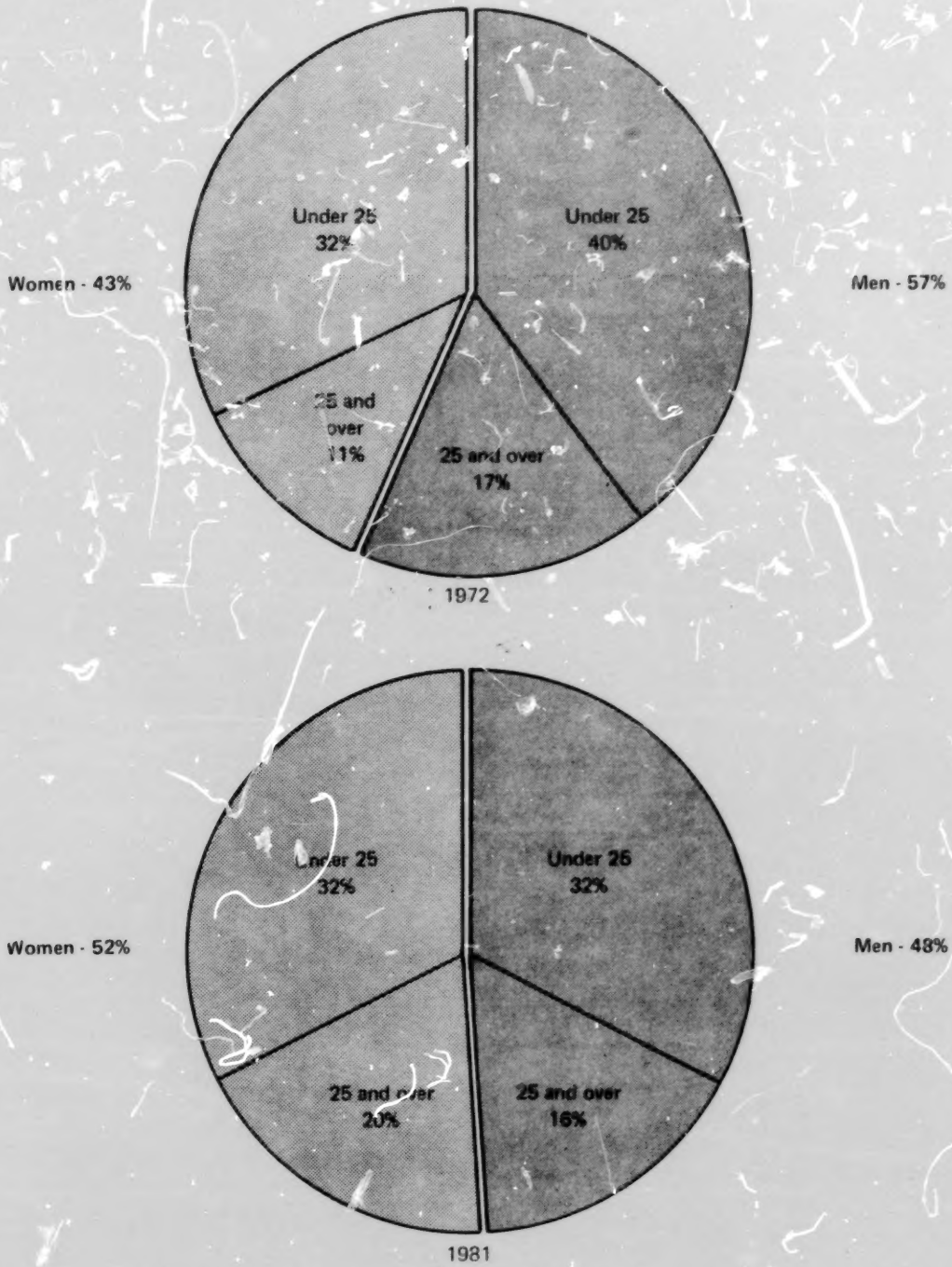
Figure 3.—Level of Education Attained by Persons 25-34 Years of Age, by Race and Spanish origin: United States, March 1982



SOURCE: U.S. Department of Commerce
Bureau of Census

Current Population Survey
March 1982, unpublished data

Figure 4.—Enrollment in institutions of higher education, by sex and age: United States: Fall 1972 and 1981



SOURCES: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, School Enrollment - Social and Economic Characteristics of Students*, Series P-20, No. 260 and 373.

Tables

Table 1. — Gross national product related to total expenditures[1] for education: United States, 1929–30 to 1982–83

Calendar year	Gross national product (in millions)	School year	Expenditures for education	
			Total (in thousands)	As a percent of gross national product
1	2	3	4	5
1929	$103,400	1929–30	$3,233,601	3.1
1931	75,100	1931–32	2,960,464	3.9
1933	55,800	1933–34	2,294,896	4.1
1935	72,500	1935–36	2,849,914	3.7
1937	90,800	1937–38	3,014,074	3.3
1939	90,900	1939–40	3,199,593	3.5
1941	125,000	1941–42	3,203,548	2.6
1943	192,100	1943–44	3,522,007	1.8
1945	212,400	1945–46	4,167,597	2.0
1947	233,100	1947–48	6,574,379	2.8
1949	258,300	1949–50	8,795,638	3.4
1951	330,800	1951–52	11,312,446	3.4
1953	366,800	1953–54	13,949,876	3.8
1955	400,000	1955–56	16,811,657	4.2
1957	444,000	1957–58	21,119,566	4.8
1959	487,900	1959–60	24,722,464	5.1
1961	524,600	1961–62	29,366,305	5.6
1963	596,700	1963–64	36,010,210	6.0
1965	691,100	1965–66	46,397,713	6.6
1967	799,600	1967–68	57,213,374	7.2
1969	944,000	1969–70	70,400,980	7.5
1971	1,077,600	1971–72	82,999,082	7.7
1973	1,326,400	1973–74	98,019,434	7.4
1975	1,549,200	1975–76	121,603,841	7.8
1977	1,918,300	1977–78	140,367,563	7.3
1979	2,417,800	1979–80	171,026,637	7.1
1980	2,631,700	1980–81	186,508,437	7.1
1982	[2] 3,073,000	1982–83	[2] 215,400,000	7.0

[1] Includes expenditures of public and private schools at all levels of education (elementary, secondary, and higher).
[2] Preliminary data.
[3] Estimated.

NOTE.—Some of the figures on gross national product have been revised since originally published.

SOURCES: U.S. Department of Education, *Digest of Education Statistics 1983-84;* GNP from U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business.*

Table 2.--Governmental expenditures for education for all purposes: United States, 1973-74 to 1981-82

Fiscal year	Total Expenditures (in millions)	Expenditures for education	
		Amount (in millions)	Percent of total
1	2	3	4
1973-74	$ 480,073	$ 81,653	17.0
1974-75	556,339	95,011	17.1
1975-76	1/630,144	1/110,283	17.0
1976-77	680,329	110,643	16.3
1977-78	745,438	118,750	15.9
1978-79	832,385	129,427	15.5
1979-80	958,657	143,830	15.0
1980-81	1,109,815	158,012	14.2
1981-82	1,231,436	166,057	13.5

1/ Includes Federal expenditures for the transaction quarter July 1-September 30, 1976 when the Federal fiscal year was adjusted under P.L. 93-344.

NOTE: Includes expenditures of Federal, State, and local governments.

SOURCE: U.S. Department of Commerce, Bureau of the Census, reports on Governmental Finances, 1981-82.

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Table 3. – Revenue receipts of public elementary and secondary schools from Federal, State, and local sources: United States, 1919–20 to 1980–81

School year	Amount in thousands of dollars				School year	Percentage distribution			
	Total	Federal	State	Local (including intermediate)[1]		Total	Federal	State	Local (including intermediate)[1]
1	2	3	4	5	1	2	3	4	5
1919–20	$970,120	$2,475	$160,085	$807,561	1919–20	100.0	0.3	16.5	83.2
1929–30	2,088,557	7,334	353,670	1,727,553	1929–30	100.0	.4	16.9	82.7
1939–40	2,260,527	39,810	684,354	1,536,363	1939–40	100.0	1.8	30.3	68.0
1941–42	2,416,580	34,305	759,993	1,622,281	1941–42	100.0	1.4	31.4	67.1
1943–44	2,604,322	35,588	859,183	1,709,253	1943–44	100.0	1.4	33.0	65.6
1945–46	3,059,845	41,376	1,062,057	1,956,409	1945–46	100.0	1.4	34.7	63.9
1947–48	4,311,534	120,270	1,676,362	2,514,902	1947–48	100.0	2.8	38.9	58.3
1949–50	5,437,044	155,848	2,165,689	3,115,507	1949–50	100.0	2.9	39.8	57.3
1951–52	6,423,816	227,711	2,478,596	3,717,507	1951–52	100.0	3.5	38.6	57.8
1953–54	7,866,852	355,237	2,944,103	4,567,512	1953–54	100.0	4.5	37.4	58.1
1955–56	9,656,677	441,192	3,828,886	5,416,350	1955–56	100.0	4.6	39.5	55.9
1957–58	12,181,513	486,484	4,800,368	6,894,661	1957–58	100.0	4.0	39.4	56.6
1959–60	14,746,618	651,639	5,768,047	8,326,932	1959–60	100.0	4.4	39.1	56.5
1961–62	17,527,707	760,975	6,789,190	9,977,542	1961–62	100.0	4.3	38.7	56.9
1963–64	20,544,182	896,956	8,078,014	11,569,213	1963–64	100.0	4.4	39.3	56.3
1965–66	25,356,858	1,996,954	9,920,219	13,439,686	1965–66	100.0	7.9	39.1	53.0
1967–68	31,903,064	2,806,469	12,275,536	16,821,063	1967–68	100.0	8.8	38.5	52.7
1969–70	40,266,923	3,219,557	16,062,776	20,984,589	1969–70	100.0	8.0	39.9	52.1
1971–72	50,003,645	4,467,969	19,133,256	26,402,420	1971–72	100.0	8.9	38.3	52.8
1973–74	58,230,892	4,930,351	24,113,409	29,187,132	1973–74	100.0	8.5	41.4	50.1
1975–76	71,206,073	6,318,345	31,776,101	33,111,627	1975–76	100.0	8.9	44.6	46.5
1977–78	81,443,160	7,694,194	35,013,266	38,735,700	1977–78	100.0	9.4	43.0	47.6
1979–80	96,881,165	9,503,537	45,348,814	42,028,813	1979–80	100.0	9.8	46.8	43.4
1980–81[2]	105,904,908	9,886,007	50,207,192	45,809,709	1980–81[2]	100.0	9.3	47.4	43.3

[1] Includes a relatively small amount from nongovernmental sources (gifts and tuition and transportation fees from patrons). These sources accounted for 0.4 percent of total revenue receipts in 1967–68.

[2] Preliminary data.

NOTE.—Beginning in 1959–60, includes Alaska and Hawaii. Because of rounding details may not add to totals.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems; Revenues and Expenditures for Public Elementary and Secondary Education;* and unpublished data.

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Table 4.--Total and per-pupil expenditures of public elementary and secondary schools, United States 1919-20 to 1981-82

School year	Expenditures for public schools (in thousands of dollars)					Expenditure per pupil in average daily attendance	
	Total	Current expenditures for day schools	Current expenditures for other programs 1/	Capital outlay	Interest	Total 2/	Current 3/
1	2	3	4	5	6	7	8
1919-20	$ 1,036,151	$ 861,120	$ 3,277	$ 153,543	$ 18,212	$ 64	$ 54
1929-30	2,316,790	1,843,552	9,825	370,878	92,536	108	87
1939-40	2,344,049	1,941,799	13,367	257,974	130,909	106	88
1949-50	5,837,643	4,687,274	35,614	1,014,176	100,578	259	209
1959-60	15,613,255	12,329,389	132,566	2,561,786	489,514	472	375
1961-62	18,373,339	14,729,270	194,093	2,862,153	587,823	530	419
1963-64	21,324,993	17,218,446	427,528	2,977,976	701,044	559	460
1965-66	26,248,026	21,053,280	648,304	3,754,862	791,580	654	537
1967-68	32,977,182	26,877,162	866,419	4,255,791	977,810	786	658
1969-70	40,683,428	34,217,773	635,803	4,659,072	1,170,782	955	816
1971-72	48,050,283	41,817,782	4/395,319	4,458,949	1,378,236	1,128	990
1973-74	56,970,355	50,024,638	4/453,207	4,978,976	1,513,534	1,364	1,207
1975-76	70,600,573	62,054,105	4/553,649	6,146,435	1,846,384	2,095	1,858
1977-78	80,844,366	73,058,023	588,782	5,245,161	1,952,400	2,190	1,994
1978-79	86,711,615	78,951,240	357,454	5,448,035	1,954,886	2,210	2,021
1979-80	95,961,561	86,984,142	597,585	6,506,167	1,873,666	2,494	2,275
1980-81	102,484,137	93,219,459	661,559	6,738,526	1,864,593	2,701	2,473
1981-82	107,332,667	96,951,139	1,231,848	6,772,154	2,377,526	2,900	2,670

1/ Includes expenditures for adult education, summer schools, community colleges, and community services (when separately reported).

2/ Includes current expenditures for day schools, capital outlay, and interest on school debt.

3/ Includes day school expenditures only; excludes current expenditures for other programs.

4/ Excludes data for adult education and community colleges.

NOTE: Beginning in 1959-60, includes Alaska and Hawaii. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Education, National Center for Education Statistics, Statistics of State School Systems; and Digest of Education Statistics, 1983-84

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Table 5. --Current-fund revenue of institutions of higher education, by control of institution and by source of revenue: United States, 1981-82

(Amounts in thousands of dollars)

Source	Current-fund revenue, by control of institution					
	Public and private		Public		Private	
	Amount	Percent	Amount	Percent	Amount	Percent
1	2	3	4	5	6	7
Total current-fund revenue	$72,190,856	100.0	$47,270,822	100.0	$24,920,034	100.0
Tuition and fees from students	15,774,038	21.9	6,394,813	13.5	9,379,225	37.6
Federal Government	9,591,805	13.3	5,373,330	11.4	4,218,475	16.9
State Government	21,848,791	30.3	21,397,063	45.3	451,728	1.8
Local Government	1,937,669	2.7	1,757,008	3.7	180,661	0.7
Private gifts, grants, and contracts...	3,563,558	4.9	1,277,049	2.7	2,286,510	9.2
Endowment income	1,596,813	2.2	244,070	0.5	1,352,742	5.4
Sales and services	15,543,098	21.5	9,620,314	20.4	5,922,784	23.8
Other sources	2,335,084	3.2	1,207,176	2.6	1,127,908	4.5

1/ Generally includes only those revenues associated with major federally funded research and development centers.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics 1983-84.

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Table 6. – Level of school completed by persons age 25 and over and 25 to 29, by race: United States, 1910 to 1982

Race, age, and date	Percent, by level of school completed			Median school years completed
	Less than 5 years of elementary school	4 years of high school or more	4 or more years of college	
1	2	3	4	5
All races				
25 and over:				
1910[1]	23.8	13.5	2.7	8.1
1920[1]	22.0	16.4	3.3	8.2
1930[1]	17.5	19.1	3.9	8.4
April 1940	13.5	24.1	4.6	8.6
April 1950	10.8	33.4	6.0	9.3
April 1960	8.3	41.1	7.7	10.5
March 1970	5.3	55.2	11.0	12.2
March 1975	4.2	62.6	13.9	12.3
March 1980	3.3	68.7	17.0	12.5
March 1981	3.3	69.7	17.1	12.5
March 1982	3.0	71.0	17.7	12.6
25 to 29:				
April 1940	5.9	37.8	5.8	10.4
April 1950	4.6	51.7	7.7	12.1
April 1960	2.6	60.7	11.1	12.3
March 1970	1.1	75.4	16.4	12.6
March 1975	1.0	83.2	22.0	12.8
March 1980	0.7	85.8	22.6	12.9
March 1981	0.7	86.3	21.3	12.8
March 1982	0.8	88.2	21.7	12.8
White [2]				
25 and over:				
April 1940	10.9	26.1	4.9	8.7
April 1950	8.7	35.5	6.4	9.7
April 1960	6.7	43.2	8.1	10.8
March 1970	4.2	57.4	11.6	12.2
March 1975	3.3	64.6	14.5	12.4
March 1980	2.6	70.7	17.9	12.5
March 1981	2.6	71.6	17.8	12.6
March 1982	2.4	72.8	18.5	12.6
25 to 29:				
1920[1]	12.9	22.0	4.5	8.5
April 1940	3.4	41.2	6.4	10.7
April 1950	3.2	55.2	8.1	12.2
April 1960	2.2	63.7	11.8	12.3
March 1970	0.9	77.8	17.3	12.6
March 1975	1.0	84.5	22.9	12.8
March 1980	0.7	87.2	23.9	12.9
March 1981	0.7	87.6	22.4	12.9
March 1982	0.8	86.9	22.7	12.9
Black and other races [2]				
25 and over:				
April 1940	41.8	7.7	1.3	5.7
April 1950	31.4	13.4	2.2	6.9
April 1960	23.5	21.7	3.5	8.2
March 1970	14.7	36.1	6.1	10.1
March 1975	11.8	46.4	9.1	11.4
March 1980	9.1	54.0	10.7	12.1
March 1981	8.1	56.2	11.7	12.2
March 1982	7.4	58.1	12.4	12.3
25 to 29:				
1920[1]	44.6	6.3	1.2	5.4
April 1940	26.7	12.1	1.6	7.1
April 1950	15.4	22.4	2.8	8.7
April 1960	7.2	38.6	5.4	10.8
March 1970	2.2	58.4	10.0	12.2
March 1975	0.7	73.8	15.2	12.6
March 1980	1.1	77.1	14.6	12.7
March 1981	0.7	78.7	14.9	12.7
March 1982	0.7	82.2	15.8	12.8

[1] Estimates based on retrojection of 1940 census data on education by age.

[2] Persons of Spanish origin are included, as appropriate, in the "white" or in the "black and other races" category.

NOTE.—Prior to 1950, data exclude Alaska and Hawaii. Data for 1975 and subsequent years are for the noninstitutional population.

SOURCES: U.S. Department of Commerce, Bureau of the Census, *1980 Census of Population*, Vol. 1, Part 1; *Current Population Reports*, Series P-20, Series P-19, No. 4; 1960 Census Monograph, *Education of the American Population*, by John K. Folger and Charles B. Nam; and unpublished data.

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Table 7. — Earned degrees conferred by institutions of higher education, by level of degree; United States, 1869-70 to 1981-82

Year	Earned degrees conferred				
	All degrees	Bachelor's[1]	First-professional[1]	Master's[2]	Doctor's
1	2	3	4	5	6
1869–70	9,372	9,371	---	0	1
1879–80	13,829	12,896	---	879	54
1889–90	16,703	15,539	---	1,015	149
1899–1900	29,375	27,410	---	1,583	382
1909–10	39,755	37,199	---	2,113	443
1919–20	53,516	48,622	---	4,279	615
1929–30	139,752	122,484	---	14,969	2,299
1939–40	216,521	186,500	---	26,731	3,290
1941–42	213,491	185,346	---	24,648	3,497
1943–44	141,582	125,863	---	13,414	2,305
1945–46	157,349	136,174	---	19,209	1,966
1947–48	317,607	271,019	---	42,400	4,188
1949–50	496,661	432,058	---	58,183	6,420
1951–52	401,203	329,986	---	63,534	7,683
1953–54	356,608	290,825	---	56,788	8,995
1955–56	376,973	308,812	---	59,258	8,903
1957–58	436,979	362,554	---	65,487	8,938
1959–60	476,704	392,440	---	74,435	9,829
1961–62	514,323	417,846	---	84,855	11,622
1963–64	614,194	498,654	---	101,050	14,490
1965–66	709,832	519,804	31,236	140,555	18,237
1967–68	866,548	632,288	34,421	176,749	23,089
1969–70	1,065,391	792,316	34,918	208,291	29,866
1970–71	1,140,292	839,730	37,946	230,509	32,107
1971–72	1,215,680	887,273	43,411	251,633	33,363
1972–73	1,270,528	922,382	50,018	263,371	34,777
1973–74	1,310,441	945,776	53,816	277,033	33,816
1974–75	1,305,382	922,933	55,916	292,450	34,083
1975–76	1,334,230	925,746	62,649	311,771	34,064
1976–77	1,334,304	919,549	64,359	317,164	33,232
1977–78	1,331,536	921,204	66,581	311,620	32,131
1978–79	1,324,047	921,390	68,848	301,079	32,730
1979–80	1,330,244	929,417	70,131	298,081	32,615
1980–81	1,335,793	935,140	71,858	295,739	32,958
1981–82	1,353,283	952,998	72,032	295,546	32,707

[1] From 1869–70 through 1963–64, first-professional degrees are included with bachelor's degrees.

[2] Prior to 1965–66, some master's degrees in fields such as library science and social work were counted as first-professional degrees and are reported in column 3.

NOTE.—Beginning in 1959–60, includes Alaska and Hawaii.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Biennial Survey of Education in the United States: Earned Degrees Conferred;* and unpublished data.

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Table 8.--Number of teachers in regular elementary and secondary schools, by level and control: United States, 1939-40 to fall 1982 1/

(Numbers in thousands)

Level and control	1939-40	1940-50	1959-60	1969-70	Fall 1980	Fall 1981	Fall 1982
1	2	3	4	5	6	7	8
Elementary 2/	640	666	953	1,271	1,365	1,349	1,362
Public	575	590	834	1,126	1,177	1,155	1,165
Private	65	3/76	3/120	3/145	3/188	3/194	3/197
Secondary	330	366	577	971	1,074	1,054	1,039
Public	300	324	521	897	985	962	945
Private	30	3/42	3/56	3/74	3/89	3/92	3/94

1/ Data for private elementary and secondary schools are not as complete as those for public schools; consequently, the estimates for private schools are not as reliable as those for public schools. The estimates are derived from enrollment changes combined with the long-terms trend in pupil-teacher ratios.

2/ Excludes subcollegiate departments of institutions of higher education, residential schools for exceptional children, and Federal schools.

3/ Estimated.

NOTE: Beginning in 1959-60, includes Alaska and Hawaii. Details may not add to totals because of rounding.

SOURCES: U.S. Department of Education, National Center for Education Statistics; Statistics of Public Elementary and Secondary Day Schools; Statistics of Nonpublic Elementary and Secondary Schools; Projections of Education Statistics to 1992-93 and surveys and estimates of the National Center for Education.

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Table 9.--Pupil-teacher ratio in public elementary and secondary day schools: United States, fall 1954 to fall 1981

Fall	Pupil-teacher ratio	Fall	Pupil-teacher ratio
1	2	1	2
1955	26.9	1970	22.3
1956	26.5	1971	22.3
1957	26.2	1972	21.8
1958	26.1	1973	21.3
1959	26.0	1974	20.8
1960	25.8	1975	20.4
1961	25.6	1976	20.3
1962	25.7	1977	19.7
1963	25.5	1978	19.4
1964	25.1	1979	19.0
1965	24.7	1980	18.8
1966	24.1	1981	18.9
1967	23.7		
1968	23.2		
1969	22.7		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Statistics of Public Elementary and Secondary Day Schools, Fall 1980 and estimates of the National Center for Education Statistics.

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Table 10. Number of institutions of higher education, by control and level: United States, 1975-76 to 1982-83

Control and level 1/	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
				NUMBER OF INSTITUTIONS AND BRANCHES				
Total, all institutions	3,026	3,046	3,095	3,134	3,152	3,231	3,253	3,280
Doctoral-level	167	167	167	168	168	167	167	167
Comprehensive	411	411	411	410	410	408	408	408
General Baccalaureate	744	744	746	738	738	732	730	727
Specialized	573	580	598	606	616	595	592	583
Two-year	1,129	1,141	1,170	1,209	1,218	1,224	1,214	1,206
New 2/	2	3	3	3	2	105	142	189
Public	1,442	1,455	1,473	1,474	1,475	1,497	1,498	1,493
Doctoral-level	106	106	106	106	106	106	106	106
Comprehensive	255	255	255	255	255	255	255	254
General Baccalaureate	120	122	122	123	123	123	123	123
Specialized	65	68	68	66	66	66	66	66
Two-year	896	906	922	924	925	938	933	925
New 2/	0	0	0	0	0	9	15	19
Private	1,584	1,591	1,622	1,660	1,677	1,734	1,755	1,787
Doctoral-level	61	61	61	62	62	61	61	61
Comprehensive	156	156	156	155	155	153	153	154
General Baccalaureat	624	622	624	615	615	609	607	604
Specialized	508	514	530	540	550	529	526	517
Two-year	233	235	248	285	293	286	281	281
New 2/	2	3	3	3	2	96	127	170

1/ This table reflects a newly adopted classification of 4-year higher educations based on total degrees awarded and the fields in which the degrees were awarded. Doctoral institutions are characterized by a significant level of activity in and commitment to doctoral-level programs. Comprehensive institutions have a strong post-baccalaureate program, but do not engage in significant doctoral-level education. General baccalaureate institutions focus primarily on undergraduate baccalaureate education. The specialized category includes professional and specialized institutions.

2/ Institutions not yet classified as to level.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Education Directory-Colleges and Universities 1981-82, and 1982-83 Supplement to the Education Directory--Colleges and Universities.

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Table 11. – Estimated enrollment in educational institutions, by level of instruction and type of control: United States, fall 1981 and fall 1982 [1]

Level of instruction and type of control	Fall 1981	Fall 1982
1	2	3
Total elementary, secondary, and higher education	**57,745,045**	**57,244,256**
Public	50,010,405	49,554,563
Private	7,734,640	7,689,693
Kindergarten–grade 12 (regular and other schools)[2]	45,373,373	44,818,476
Regular public schools	40,148,373	39,643,476
Regular private schools	4,950,000	4,900,000
Other public schools	215,000	215,000
Other private schools	60,000	60,000
Kindergarten–grade 8 (regular and other schools)[2]	31,069,119	30,922,803
Regular public schools	27,289,119	27,142,803
Regular private schools	3,620,000	3,600,000
Other public schools	155,000	155,000
Other private schools	25,000	25,000
Grades 9–12 (regular and other schools)[2]	14,304,254	13,895,673
Regular public schools	12,879,254	12,500,673
Regular private schools	1,330,000	1,300,000
Other public schools	60,000	60,000
Other private schools	35,000	35,000
Higher education (total enrollment in colleges, universities, professional schools, teachers colleges, and junior colleges)	12,371,672	12,425,780
Public	9,647,032	9,696,087
Private	2,724,640	2,729,693

[1] The 1981 figures for private and "other" elementary and secondary schools, and all of the elementary and secondary data for 1982, are estimates. The estimates are derived from changes in the school-age population combined with long-range trends in school enrollment rates.

[2] "Regular" schools include schools which are a part of State and local school systems and also most non-profitmaking private elementary and secondary schools, both church affiliated and nonsectarian. "Other" schools include subcollegiate departments of institutions of higher education, residential schools for exceptional children, Federal schools for Indians, and Federal schools on military posts and other Federal installations.

NOTE.—Fall enrollment is usually smaller than school-year enrollment, since the latter is a cumulative figure that includes students who enroll at any time during the year.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary School Systems, Fall 1981 (forthcoming); Fall Enrollment in Colleges and Universities* (forthcoming 1981 and 1982 editions); and estimates of the National Center for Education Statistics.

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Table 12. – Enrollment in grades 9–12 in public and private schools compared with population 14–17 years of age: United States, 1889–90 to fall 1981

School year	Enrollment, grades 9–12[1]			Population 14–17 years of age[2]	Total number enrolled per 100 persons 14–17 years of age
	All schools	Public schools	Private schools		
1	2	3	4	5	6
1889–90	359,949	[3] 202,963	[3] 94,931	5,354,653	6.7
1899–1900	699,403	[3] 519,251	[3] 110,797	6 152,231	11.4
1909–10	1,115,398	[3] 915,061	[3] 117,400	7,220,298	15.4
1919–20	2,500,176	[3] 2,200,389	[3] 213,920	7,735,841	32.3
1929–30	4,804,255	[3] 4,399,422	[3, 4] 341,158	9,341,221	51.4
1939–40	7,123,009	6,635,337	487,672	9,720,419	73.3
1941–42	6,933,265	6,420,544	512,721	9,749,000	71.1
1943–44	6,030,617	5,584,656	445,961	9,449,000	63.8
1945–46	6,237,133	5,664,528	572,605	9,056,000	68.9
1947–48	6,306,168	5,675,937	629,231	8,841,000	71.3
1949–50	6,453,009	5,757,810	695,199	8,404,788	76.8
1951–52	6,596,351	5,917,384	678,967	8,516,000	77.5
1953–54	7,108,973	6,330,565	778,408	8,861,000	80.2
1955–56	7,774,975	6,917,790	857,185	9,207,000	84.4
1957–58	8,869,186	7,905,469	963,717	10,139,000	87.5
1959–60	9,599,810	8,531,454	1,068,356	11,154,879	86.1
1961–62	10,768,972	9,616,755	1,152,217	12,046,000	89.4
Fall 1963	12,255,496	10,935,536	1,319,960	13,492,000	90.8
Fall 1965	13,020,823	11,657,808	1,363,015	14,145,000	92.1
Fall 1969	14,418,301	13,084,301	[5] 1,334,000	15,550,000	92.7
Fall 1971	15,226,000	13,886,000	[5] 1,340,000	16,326,000	93.3
Fall 1973	15,477,000	14,142,000	[5] 1,335,000	16,864,000	91.8
Fall 1975	15,704,000	14,369,000	[5] 1,335,000	17,125,000	91.7
Fall 1977	15,682,000	14,305,000	[5] 1,377,000	17,042,000	92.0
Fall 1979	15,191,000	13,756,000	[5] 1,435,000	16,610,000	91.5
Fall 1981	14,374,000	[6] 12,939,000	[5] 1,435,000	15,565,000	92.3

[1] Unless otherwise indicated, includes enrollment in subcollegiate departments of institutions of higher education and in residential schools for exceptional children. Beginning in 1949–50, also includes Federal schools.

[2] Includes all persons residing in the United States, but excludes Armed Forces overseas. Data from the decennial censuses have been used when appropriate. Other figures are Bureau of the Census estimates as of July 1 preceding the opening of the school year.

[3] Excludes enrollment in subcollegiate departments of institutions of higher education and in residential schools for exceptional children.

[4] Data for 1927–28.

[5] Estimated.

[6] Preliminary data.

NOTE.—Beginning in 1959–60, includes Alaska and Hawaii. Some of the estimates of the population aged 14–17 have been revised slightly since originally published.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems; Statistics of Public Elementary and Secondary School Systems; Statistics of Nonpublic Elementary and Secondary Schools;* and unpublished data.

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Table 13. - Enrollment of 3-, 4-, and 5-year-old children in preprimary programs, by age and type of program; United States, October 1979 and October 1982

Enrollment status and type of program	October 1979				October 1982			
	Total 3-5 years old	3 years old	4 years old	5 years old	Total 3-5 years old	3 years old	4 years old	5 years old
1	2	3	4	5	6	7	8	9
Enrollment status								
Total population	9,119	3,025	3,070	3,024	9,873	3,387	3,271	3,215
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Enrolled	51.1	24.6	45.4	83.5	51.7	27.4	45.7	83.4
Not enrolled in these programs	48.9	75.4	54.6	16.5	48.3	72.6	54.3	16.6
Type of program								
Total enrolled	4,664	746	1,393	2,525	5,105	928	1,496	2,681
Nursery schools	1,862	725	1,023	114	2,151	890	1,158	104
Public	633	216	359	58	729	312	377	40
Private	1,228	509	664	56	1,423	578	781	64
Kindergarten	2,802	20	370	2,411	2,954	38	338	2,578
Public	2,381	16	247	2,119	2,459	27	225	2,207
Private	421	5	123	293	494	10	113	370

NOTE: Data excluded 5-year-olds enrolled at the primary level and 6-year-olds in preprimary programs. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Commerce, Bureau of the Census, unpublished data from the Current Population Surveys.

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Table 14. --Total enrollment in institutions of higher education compared with population aged 18-24: United States, fall 196[illegible] to fall 1982

Year	Population 18-24 years of age 1/	Enrollment	Number enrolled per 100 persons 18-24 years of age
1	2	3	4
1963	18,261,000	4,765,867	26.1
1964	18,783,000	5,2[illegible],020	28.1
1965	20,[illegible]3,000	5,920,864	29.2
1966	21,376,000	6,389,872	29.9
1967	22,327,000	6,911,748	31.0
1968	22,883,000	7,513,091	32.8
1969	23,723,000	8,404,660	33.7
1970	24,687,000	8,580,887	34.8
1971	25,779,000	8,948,644	34.7
1972	25,913,000	9,214,860	35.6
1973	26,397,000	9,602,123	36.4
1974	26,916,000	10,223,729	38.0
1975	27,605,000	11,184,859	40.5
1976	28,163,000	11,012,137	39.1
1977	28,695,000	11,285,787	39.5
1978	28,971,000	11,260,092	38.9
1979	29,285,000	11,569,899	39.5
1980	30,348,000	12,096,895	39.9
1981	30,447,000	12,371,672	40.6
1982	30,367,000	12,425,780	40.9

1/ Bureau of the Census estimates as of July 1 preceding the opening of the academic year includes Armed Forces overseas.

NOTE: While 18 to 24 is frequently considered to be the usual age for college attendance, an increasing number of students in recent years have been outside this age group. According to a sample survey conducted by the Bureau of the Census in October 1982, 2.0 percent of the students were under 18; 45.5 percent, 18 to 21; 16.7 percent, 22 to 24; and 35.8 percent, 25 or over.

SOURCES: (1) U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Higher Education. (2) U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-25, Nos. 519, 704, 721, 870, and 929.

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Table 15.--Percent of high school seniors who had entered postsecondary education two years later, by selected characteristics; United States, February 1982

Characteristics	Total a/	Four-year college	Two-year college	Voc/tech institutions
All persons	63	35 b/	25 c/	8 d/
Sex:				
Male	59	34	23	6
Female	66	36	26	9
Racial/ethnic group:				
Hispanic	52	20	28	9
Black	60	33	20	11
White	64	37	25	7
Asian American	86	51	37	4
American Indian	53	20	22	14
Cognitive test performance:				
High	88	69	21	4
Middle	65	33	30	8
Low	40	11	20	11

a/ Sum of details can exceed totals because some respondents entered more than one type of institution.

b/ Of these, 31 percent were immediate entry, i.e. by October 1980.

c/ Of these, 18 percent were immediate entry.

d/ Of these, 5 percent were immediate entry.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond, survey of the high school seniors of 1980, unpublished data.

Table 16. Number of nonresident alien students enrolled in institutions of higher education by year and type of institution: United States 1976 to 1982

Year	Total	Universities and 4-year institutions	2-year institutions
1976	218,000	176,000	42,000
1978	252,000	200,000	52,000
1980	305,000	241,000	64,000
1982	332,000	271,000	61,000

SOURCE: U.S. Department of Education, Office for Civil Rights, unpublished data.

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Table 17. – Foreign-born population in the United States, by age: 1970 and 1980

Age	1970	1980	Percent change 1970-80	Percent of total population 1970	1980
Total persons	9,619,302	14,079,906	+46.4	4.7	6.2
Under 5 years	102,926	220,847	+114.6	0.6	1.4
5 to 9 years	220,477	436,890	+98.2	1.1	2.6
10 to 14 years	283,438	587,394	+107.2	1.4	3.2
15 to 19 years	348,506	872,935	+150.5	1.8	4.1
20 to 24 years	502,529	1,198,394	+138.5	3.1	5.6
25 and over	8,161,426	10,763,446	+31.9	7.4	8.1
65 and over	3,075,157	2,980,354	-3.1	15.3	11.7

SOURCE: U.S. Department of Commerce, Bureau of Census, 1970 and 1980 Census of Population

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